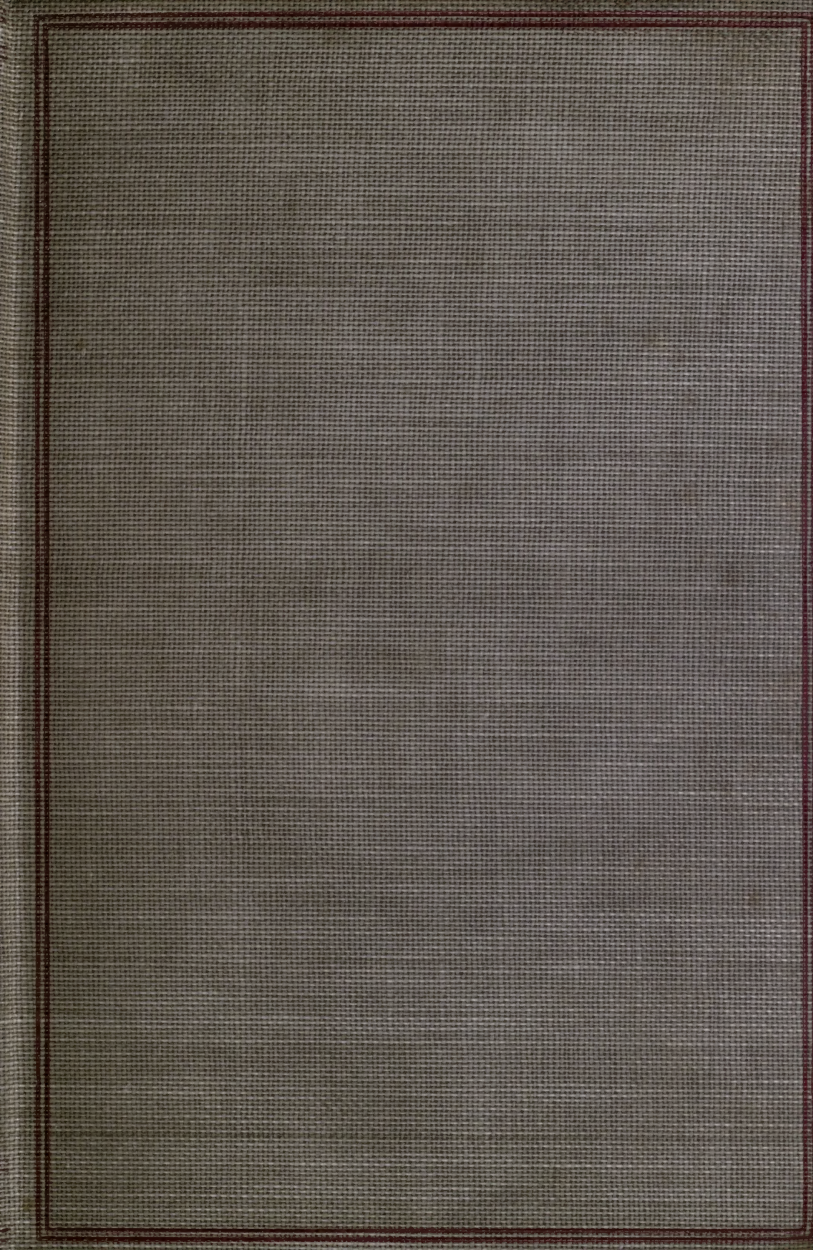
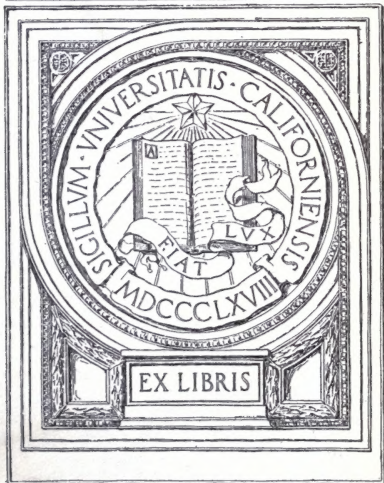




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A
PRACTICAL HANDBOOK
OF
BRITISH BIRDS

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PREFACE TO VOLUME I.

THAT this volume has been completed in a shorter time than was considered probable when we commenced publication will, we believe, be appreciated by our readers.

In order to avoid the inconvenience of having to consult two lists of addenda and corrigenda it has been thought best to leave these over until the end of the work, when a complete list will be given.

We gladly avail ourselves of this opportunity to thank all those who have given us assistance, which shall be more particularized when our task is finished, and to state that we should greatly welcome criticisms and information which would lead to greater accuracy and completeness in the detail of the work.

THE EDITOR.

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LIST OF ILLUSTRATIONS IN VOLUME I.

	PAGE
Method of measuring wing, tail, tarsus and bill	*XIII & *XIV
Topography of the nestling	*XIV
Bill showing gonys. Topography of the underwing	*XV
Topography of a bird	*XVI
Gannet (<i>Sula bassana</i>), foot	1
Fulmar Petrel (<i>Fulmarus glacialis</i>) and Manx Shearwater (<i>Puffinus puffinus</i>), showing tubular nostrils	1
Wigeon (<i>Anas penelope</i>), showing lamellated cutting-edges of bill ...	2
Great Crested Grebe (<i>Podiceps cristatus</i>), Red-throated Diver (<i>Colymbus stellatus</i>) and Black Guillemot (<i>Uria grylle</i>), feet	2
Black-headed Gull (<i>Larus ridibundus</i>), foot	2
Common Heron (<i>Ardea cinerea</i>) bill showing bare loreal region ...	3
Lapwing (<i>Vanellus vanellus</i>), Grey Plover (<i>Squatarola squatarola</i>) and Common Snipe (<i>Gallinago gallinago</i>), rudimentary 1st primaries ...	3
Wood-Pigeon (<i>Columba palumbus</i>), bill showing nostrils	3
Barn-Owl (<i>Tyto alba</i>) and Peregrine Falcon (<i>Falco peregrinus</i>), heads	4
Pallas's Sand-Grouse (<i>Syrhaptes paradoxus</i>), foot	4
Green Woodpecker (<i>Picus viridis</i>), foot	4
Hoopoe (<i>Upupa epops</i>), head	4
Cuckoo (<i>Cuculus canorus</i>), Nightjar (<i>Caprimulgus europæus</i>), and Swift (<i>Apus apus</i>), feet	5
Bee-Eater (<i>Merops apiaster</i>), tail	5
Raven (<i>Corvus corax</i>), foot	5
Roller (<i>Coracias garrulus</i>) and Kingfisher (<i>Alcedo ispida</i>), bills ...	5
Raven (<i>Corvus c. corax</i>) and Carrion-Crow (<i>C. c. corone</i>), bills ...	9
Raven, Carrion-Crow and Rook (<i>C. frugilegus</i>), feathers from throat ...	13
Carrion-Crow and Rook, wing-formula	16
PLATE 1.—Rooks' Heads. Fig. 1, Juvenile. Fig. 2, Juvenile Moulting. Fig. 3, First Winter. Figs. 4-7, Molt of First Summer. Figs. 8-13, Adults. Fig. 8, Autumn moult. Fig. 9, Molt just complete. Figs. 10-13, To show gradual wear of "down," during winter and spring facing	16
Jackdaw (<i>Colæus m. spermologus</i>), head... ..	19
Thick-billed Nutteracker (<i>Nucifraga c. caryocatactes</i>), Slender-billed Nutteracker (<i>N. c. macrorhynchus</i>), heads	26
British Jay (<i>Garrulus g. rustergum</i>), wing	28
Chough (<i>Pyrrhocorax pyrrhocorax</i>), head	31
Starling (<i>Sturnus v. vulgaris</i>), throat-feathers of ♂ adult and first winter	35
Rose-coloured Starling (<i>Pastor roseus</i>), head	37
Hawfinch (<i>Coccothraustes c. coccothraustes</i>), bill and 6th (curled) primary	44
Greenfinch (<i>Chloris c. chloris</i>), head and tail	47
PLATE 2.—Juvenile plumages of 1, Lesser Redpoll (<i>Carduelis l. cabaret</i>). 2, Siskin (<i>Carduelis spinus</i>). 3, Hawfinch (<i>Coccothraustes c. coccothraustes</i>). 4, British Goldfinch (<i>Carduelis c. britannica</i>). 5, Greenfinch (<i>Chloris ch. chloris</i>) facing	48
Goldfinch (<i>Carduelis carduelis</i>), head	52
Siskin (<i>C. spinus</i>), head and wing	54
PLATE 3.—1, Lesser Redpoll (<i>C. l. cabaret</i>). 2, Mealy Redpoll (<i>C. l. linaria</i>). 3, Greenland Redpoll (<i>C. l. rostrata</i>). 4, Coues's Redpoll (<i>C. h. exilipes</i>). 5, Hornemann's Redpoll (<i>C. h. hornemannii</i>) facing	64
Citril Finch (<i>C. c. citrinella</i>), ♂ adult	67

	PAGE
Serin (<i>Serinus c. serinus</i>), head ♀	72
Northern Bullfinch (<i>Pyrrhula p. pyrrhula</i>) and British Bullfinch (<i>P. p. pileata</i>), bills	74
Scarlet Grosbeak (<i>Carpodacus e. erythrinus</i>), ♀ autumn	78
Pine-Grosbeak (<i>Pinicola e. enucleator</i>), wing and head	81
PLATE 4.—Common Crossbill (<i>Loxia c. curvirostra</i>). Male, female and juveniles facing	84
Common Crossbill (<i>Loxia c. curvirostra</i>), adult, nestling, Scottish Crossbill (<i>L. c. scotica</i>), and Parrot-Crossbill (<i>L. pytyopsittacus</i>), bills	88
Two-barred Crossbill (<i>L. l. bifasciata</i>), wing	89
Chaffinch (<i>Fringilla c. cælebs</i>), wing	92
Brambling (<i>F. montifringilla</i>), wing	95
Brambling, from above	97
Snowfinch (<i>Montifringilla n. nivalis</i>), wing and head	98
House-Sparrow (<i>Passer d. domesticus</i>) and Tree-Sparrow (<i>P. m. montanus</i>), heads	101
Corn-Bunting (<i>Emberiza c. calandra</i>), head	108
PLATE 5.—1, Yellow Bunting (<i>Emberiza c. citrinella</i>). 2, Cirl Bunting (<i>E. cirius</i>). 3, Pine-Bunting (<i>E. leucocephala</i>). 4, Black-headed Bunting (<i>E. melanocephala</i>). 5, Yellow-breasted Bunting (<i>E. aureola</i>). 6, Ortolan Bunting (<i>E. hortulana</i>). 7, Meadow-Bunting (<i>E. c. cia</i>). 8, East Siberian Meadow-Bunting (<i>E. cioides castaneiceps</i>). 9, Little Bunting (<i>E. pusilla</i>). 10, Rustic Bunting (<i>E. rustica</i>) facing	120
Reed-Bunting (<i>Emberiza s. schæniclus</i>), Western Large-billed Reed-Bunting (<i>E. p. palustris</i>) and Eastern Large-billed Reed-Bunting (<i>E. p. tschusii</i>), heads	136
Lapland Bunting (<i>Calcarius l. lapponicus</i>), head and foot	138
Snow-Bunting (<i>Plectrophenax nivalis</i>), ♀ first winter, ♂ ad. wings	142
White-winged Lark (<i>Melanocorypha sibirica</i>), wing	147
Black Lark (<i>M. yeltoniensis</i>), head and foot	149
Calandra Lark (<i>M. c. calandra</i>), head	151
Short-toed Lark (<i>Calandrella b. brachydactyla</i>), head	154
Crested Lark (<i>Galerida c. cristata</i>), head	157
Wood-Lark (<i>Lullula a. arborea</i>), head and wing	160
Sky-Lark (<i>Alauda a. arvensis</i>), head	163
PLATE 6.—1, Juvenile Snow-Bunting (<i>Plectrophenax nivalis</i>). 2, Juvenile Wood-Lark (<i>Lullula a. arborea</i>). 3, Juvenile Sky-Lark (<i>Alauda a. arvensis</i>). 4, First-winter Richard's Pipit (<i>Anthus r. richardi</i>). 5, Juvenile Rock-Pipit (<i>A. s. petrosus</i>). 6, 1st primaries of Sky-Lark (a) juvenile, (b) adult. 7, Crest-feathers of (c) Sky-Lark, (d) Wood-Lark, (e) Crested Lark. 8, Rump-feathers (f) Red-throated Pipit, (g) Meadow-Pipit facing	164
Shore-Lark (<i>Eremophila a. flava</i>), head	168
Richard's Pipit (<i>Anthus r. richardi</i>), foot	172
Tawny Pipit (<i>A. c. campestris</i>), foot	174
Tree-Pipit (<i>A. trivialis</i>), Meadow-Pipit (<i>A. pratensis</i>), wings and feet	177
PLATE 7.—1, Blue-headed Wagtail (<i>Motacilla f. flava</i>). 2, Yellow Wagtail (<i>M. f. rayi</i>). 3, Grey-headed Wagtail (<i>M. f. thunbergi</i>). 4, Sykes's Wagtail (<i>M. f. beema</i>). 5, Ashy-headed Wagtail (<i>M. f. cinereocapilla</i>). 6, Black-headed Wagtail (<i>M. f. feldegg</i>) ... facing	210
Grey Wagtail (<i>Motacilla c. cinerea</i>), head	203
PLATE 8.—Pied Wagtails (<i>M. a. lugubris</i>) and White Wagtails (<i>M. a. alba</i>) in various plumages facing	192
Masked Wagtail (<i>M. a. personata</i>), head	212
British Tree-Creeper (<i>Certhia f. britannica</i>), head, tail and foot	215
Wall-Creeper (<i>Tichodroma muraria</i>), wing and bill	219
British Nuthatch (<i>Sitta e. britannica</i>), head and foot	222
British Great Titmouse (<i>Parus m. newtoni</i>) and Continental Great Titmouse (<i>P. m. major</i>), showing difference in bills	227

PLATE 9.—1, Continental Blue Titmouse (<i>Parus c. caeruleus</i>).	
2, British Blue Titmouse (<i>P. c. obscurus</i>). 3, Continental Coal-Titmouse (<i>P. a. ater</i>). 4, Adult, 5, Juvenile of British Coal-Titmouse (<i>P. a. britannicus</i>). 6, Irish Coal-Titmouse (<i>P. a. hibernicus</i>). 7, British Marsh-Titmouse (<i>P. p. dresseri</i>). 8, British Willow-Titmouse (<i>P. a. kleinschmidtii</i>) facing	232
Scottish Crested Titmouse (<i>Parus c. scoticus</i>), adult and juvenile heads	238
PLATE 10.—1, Northern Long-tailed Titmouse (<i>Ægithalos c. caudatus</i>).	
2, Adult, 3, Juvenile of British Long-tailed Titmouse (<i>Æ. c. roseus</i>). 4, Adult, 5, Juvenile of British Golden-crested Wren (<i>Regulus r. anglorum</i>). 6, Fire-crested Wren (<i>R. i. ignicapillus</i>). 7, Adult male, 8, Adult female. 9, Juvenile of Bearded Titmouse (<i>Panurus b. biarmicus</i>). 10, Adult male, 11, Juvenile of Red-backed Shrike (<i>Lanius c. collurio</i>). 12, Juvenile Spotted Flycatcher (<i>Muscicapa s. striata</i>) facing	256
Lesser Grey Shrike (<i>Lanius minor</i>), showing difference in wing-formula as compared with Great Grey Shrike	260
Great Grey Shrike (<i>L. e. excubitor</i>), head	263
Great Grey Shrike, wing	264
Corsican Woodchat Shrike (<i>L. s. badius</i>) and the Woodchat Shrike (<i>L. s. senator</i>), wings	268
Masked Shrike (<i>L. nubicus</i>), head	272
Waxwing (<i>Bombycilla garrulus</i>), head and wing	279
Pied Flycatcher (<i>Muscicapa h. hypoleuca</i>), head and wing	289
Collared Flycatcher (<i>M. albicollis</i>), head and wing	293
Red-breasted Flycatcher (<i>M. p. parva</i>), tail	295
Chiffchaff (<i>Phylloscopus c. collybita</i>) and Willow-Warbler (<i>Ph. t. trochilus</i>), showing difference in wing-formula	299
Greenish Warbler (<i>Ph. n. viridanus</i>), showing difference in wing-formula as compared with Eversmann's Warbler	308
Wood-Warbler (<i>Ph. s. sibilatrix</i>), showing minute 1st primary	309
Eversmann's Warbler (<i>Ph. b. borealis</i>), showing difference in wing-formula as compared with Greenish Warbler	312
PLATE 11.—1, Chiffchaff (<i>Phylloscopus c. collybita</i>) winter. 2, Siberian Chiffchaff (<i>Ph. c. tristis</i>) winter. 3, Adult summer, 4, First winter of Willow-Warbler (<i>Ph. t. trochilus</i>). 5, Northern Willow-Warbler (<i>Ph. t. eversmanni</i>) adult summer. 6, Greenish Warbler (<i>Ph. n. viridanus</i>). 7, Wood-Warbler (<i>Ph. s. sibilatrix</i>) juvenile. 8, Eversmann's Warbler (<i>Ph. b. borealis</i>) first winter. 9, Yellow-browed Warbler (<i>Ph. h. pramium</i>) winter facing	312
Dusky Warbler (<i>Ph. fuscatus</i>), head, wing and tail	318
Radde's Bush-Warbler (<i>Herbivocula schwarzi</i>) and Dusky Warbler (<i>Ph. fuscatus</i>), bills	320
Cetti's Warbler (<i>Cettia c. cetti</i>), tail	322
Moustached Warbler (<i>Luscinola m. melanopogon</i>), tail	324
PLATE 12.—1, Savi's Warbler (<i>Locustella l. luscinoides</i>). 2, Grasshopper-Warbler (<i>L. n. naevia</i>), ♂ summer. 3, Lanceolated Warbler (<i>L. lanceolata</i>) ♂ summer. 4, Barred Warbler (<i>Sylvia n. nisoria</i>), 1st winter. 5, Orphean Warbler (<i>S. h. hortensis</i>) ♂. 6, Garden-Warbler (<i>S. borin</i>). 7, Blackcap (<i>S. a. atricapilla</i>) ♂ facing	328
Pallas's Grasshopper-Warbler (<i>Locustella certhiola</i>), tail	329
Great Reed-Warbler (<i>Acrocephalus a. arundinaceus</i>), head	335
Great Reed-Warbler and Eastern Great Reed-Warbler (<i>A. a. orientalis</i>) showing difference in wings	338
Reed-Warbler (<i>A. s. scirpaceus</i>), head	339
Reed-Warbler (<i>A. s. scirpaceus</i>), Marsh-Warbler (<i>A. palustris</i>) and Blyth's Reed-Warbler (<i>A. dumetorum</i>), wings, showing differences	342
Moustached Warbler (<i>Luscinola m. melanopogon</i>), Sedge-Warbler (<i>A. schænobænus</i>) and Aquatic Warbler (<i>A. aquaticus</i>), heads ...	346

	PAGE
Icterine Warbler (<i>Hypolais icterina</i>), bill	352
Icterine Warbler, Melodious Warbler (<i>H. polyglotta</i>) and Olivaceous Warbler (<i>H. p. elegica</i>), showing difference in wing-formula	354
PLATE 13.—1, Whitethroat (<i>Sylvia c. communis</i>) ♀ adult. 2, Lesser Whitethroat (<i>S. c. curruca</i>) ♀ adult. 3, male adult, 4, female adult Rüppell's Warbler (<i>S. rüppelli</i>). 5, ♂ adult 6, ♀ 1st winter Sardinian Warbler (<i>S. m. melanocephala</i>). 7, ♂ adult, 8, ♀ juv. Subalpine Warbler (<i>S. c. cantillans</i>). 9, ♂ adult, 10, juvenile Dartford Warbler (<i>S. u. dartfordiensis</i>)	376
Rufous Warbler (<i>Agrobates g. galactotes</i>), tail	386
PLATE 14.—1, White's Thrush (<i>Turdus d. aureus</i>). 2, ♂ adult Fieldfare (<i>T. pilaris</i>). 3, British Song-Thrush (<i>T. ph. clarkei</i>). 4, Hebridean Song-Thrush (<i>T. ph. hebridensis</i>). 5, ♂ adult summer, 6, Juvenile, Rock-Thrush (<i>Monticola saxatilis</i>)	392
Redwing (<i>Turdus musicus</i>), head	404
Dusky Thrush (<i>Turdus eunomus</i>), head	407
Black-throated Thrush (<i>Turdus r. atrogularis</i>), head	410
PLATE 15.—1, Juvenile Mistle-Thrush (<i>Turdus v. viscivorus</i>). 2, Juvenile British Song-Thrush (<i>T. ph. clarkei</i>). 3, Juvenile Ring-Ouzel (<i>T. t. torquatus</i>). 4, Juvenile ♂ Blackbird (<i>T. m. merula</i>). 5, Juvenile British Dipper (<i>Cinclus c. britannicus</i>). A, Inner greater covert of juvenile Redwing (<i>T. musicus</i>). B, Under tail-coverts of Ring-Ouzel and Alpine Ring-Ouzel	414
Wheatear (<i>Enanthe æ. ænanthe</i>), tail	426
Western Desert-Wheatear (<i>Æ. d. homochroa</i>), tail	432
Western Black-eared Wheatear (<i>Æ. h. hispanica</i>), tail	435
Western and Eastern Black-eared Wheatears, heads	439
Pied Wheatear (<i>Æ. p. pleschanka</i>), adult male, summer, head	441
Isabelline Wheatear (<i>Æ. isabellina</i>) and Greenland Wheatear (<i>Æ. æ. leucorrhœa</i>), bills	444
Black Wheatear (<i>Æ. l. leucura</i>) and North African Black Wheatear (<i>Æ. l. syenitica</i>), tails	446
British Stonechat (<i>Saxicola t. hibernans</i>) and Whinchat (<i>S. r. rubetra</i>), adult females, heads	450
PLATE 16.—Juveniles of 1, The Wheatear (<i>Enanthe æ. ænanthe</i>). 2, The Whinchat (<i>S. r. rubetra</i>). 3, The British Stonechat (<i>Saxicola t. hibernans</i>). 4, The Redstart (<i>Phœnicurus ph. phœnicurus</i>). 5, The Nightingale (<i>Luscinia m. megarhyncha</i>). 6, The British Robin (<i>Erithacus r. melophilus</i>)	452
British Stonechat (<i>S. t. hibernans</i>), adult male, summer, head	454
Redstart (<i>Ph. ph. phœnicurus</i>), winter and summer, heads	459
Black Redstart (<i>Ph. o. gibraltariensis</i>), adult male, wing	464
Nightingale (<i>Luscinia m. megarhyncha</i>) and Thrush-Nightingale (<i>L. luscinia</i>), showing differences in wing-formula	468
Norwegian Bluethroat (<i>Luscinia s. gaetkei</i>), female winter, head	473
Norwegian and Lapland Bluethroat (<i>L. s. svecica</i>), showing longer "wing-tip" in former than in latter	475
Alpine Accentor (<i>Prunella c. collaris</i>), head	485
Continental Hedge-Sparrow (<i>P. m. modularis</i>) and British Hedge-Sparrow (<i>P. m. occidentalis</i>), showing difference in wing-formula	488
British Hedge-Sparrow, wing and bill	489
PLATE 17.—1, The Wren (<i>Troglodytes t. troglodytes</i>). 2, The St. Kilda Wren (<i>T. t. hirtensis</i>). 3, The Shetland Wren (<i>T. t. zelandicus</i>). 4, The Black-bellied Dipper (<i>Cinclus c. cinclus</i>). 5, The British Dipper (<i>C. c. britannicus</i>). 6, The Irish Dipper (<i>C. c. hibernicus</i>)	496
Swallow (<i>Hirundo r. rustica</i>), adult and juvenile, tails and foot	503
Red-rumped Swallow (<i>H. d. rufula</i>), tail	507
Martin (<i>Delichon u. urtica</i>), tail and foot	510
The Sand-Martin (<i>Riparia r. riparia</i>), head and foot	513

INTRODUCTORY NOTE

TO

PART I.

NOTWITHSTANDING the innumerable books on British birds, an up-to-date Handbook containing reliable information, so arranged as to be easily accessible, seems to be required. It is this requirement that we endeavour to meet in this book. Our aim has been to produce a work of real practical utility not only to the professed ornithologist, but also to the beginner.

The plan of the book may here be briefly explained.

KEYS TO THE ORDERS, FAMILIES AND GENERA. Identification by the Keys alone must never be attempted—they are intended as *guides* to identification, and not as means of identification. If used conscientiously in conjunction with the characters given more fully under each ORDER, FAMILY, and GENUS, they will, we believe, prove of real practical use and, it may be suggested, of some educational value. It must always be borne in mind, however, that the greater systematic divisions are chiefly founded upon anatomical characters, most of which the ordinary student of birds cannot appreciate. Consequently many of the characters used in the Keys (especially the Key to the Orders) are superficial and have been chosen merely for purposes of differentiation.

KEYS TO THE SPECIES AND SUBSPECIES. These give only salient characters, which may not be always well marked in every individual. These Keys must not be relied upon alone for certain identification, but must be used as a guide to the description and “characters” sections.

NAMES OF SPECIES AND SUBSPECIES. A binomial appellation for each species is given in large black type. In cases in which a

species has been divided into two or more geographical races or subspecies this name may still be used when it is not desired to particularize the subspecies. The precise appellation of each species and subspecies which we admit to the British list is preceded by a number. The nomenclature employed is that of "A Hand-List of British Birds" (1912), revised and brought up to date, and is in strict conformity with the "International Rules of Zoological Nomenclature" and the "Opinions" published by the International Commission. Explanatory notes are given where considered necessary.

SYNONYMY. In every case a reference to the original description is given and the date and typical locality are added. A reference quoted as "Yarrell" is also given to Yarrell's "History of British Birds," 4th edition (1871-85), edited by A. Newton and H. Saunders, and to "An Illustrated Manual of British Birds" by Howard Saunders, 2nd edition (1897-9), quoted as "Saunders." When a bird has been added to the British list since the publication of the latter work, we have given a reference in the synonymy to the first record. References will also be found to names given specially to British birds, whether now considered distinct or not. "British Birds" (magazine) has been quoted throughout as "Brit. B." A full bibliography will be given in the last part of this work. Every reference has been carefully checked, and we are much indebted to Mr. E. E. Riseley for having performed this most useful task.

DESCRIPTIONS. These are more complete than any hitherto published in a book on British birds. A description giving the sequence of plumages and moults from the nestling to maturity and from season to season of each British bird has for long been a keenly felt want. This we have endeavoured so far as possible to supply. The difficulty of such descriptions is that, beyond the great labour involved, very large series of skins collected at all times of the year must be minutely examined. The task would have been impossible had not those responsible for this section been given every facility by the generosity of the Hon. Walter Rothschild in making use of his magnificent collection. The British Museum collection has also, by the kindness of the

authorities, been freely consulted whenever necessary, and thus two of the three largest collections of bird-skins in the world have been available. Notwithstanding this, the private collections of the writers have been found invaluable adjuncts, because they contain many moulting birds and young birds which are unfortunately still considered by most collectors to be hardly worth preserving.

It will be found that the various parts of the plumage are described in a uniform order throughout, which should make reference easy. The different plumages of each species are also described in a definite order as follows:—*Adult male* (and female if different), *winter*, *summer*, *Nestling* (i.e. as soon as hatched), *Juvenile* (i.e. the first covering of true feathers), *First winter* (i.e. the plumage following the juvenile), *First summer*, *Second*, *third*, etc. *Winter and Summer*, if different from the adult. The adult winter plumage has been taken first for the full description, because this is usually the most perfect plumage in that it is acquired by a complete moult. Other plumages of the adult are usually a modification of this plumage either by wear or else by partial moult. All British birds have one complete annual moult, many have a second partial moult, but few have two complete moults. A special point has been made to give details of the periods and extent of the moults of each species.

MEASUREMENTS AND STRUCTURE. Under this heading it will be found that all measurements are given in millimetres and centimetres, not only because the "International Rules" so advise but also because one-tenth of an inch does not provide a small enough division for scientific accuracy (especially in eggs), and a smaller fraction in inches is clumsy. The comparative length of the primaries given in every species will, it is thought, be found useful, and this has never been *systematically* done before.

Figures showing the various parts of a bird's plumage, and how measurements are taken are given below, as well as a glossary of terms and a millimetres and inches table.

CHARACTERS AND ALLIED FORMS. In this section an indication is given of how various subspecies differ, and their approximate

breeding-range is noted. These brief details will, it is thought, be found useful by those who are travelling out of the British Isles. There follow the chief characteristics of the species for the purpose of distinguishing it rapidly from any other on the British list with which it might be confused. This section may be used conveniently with the Keys, and it is hoped that it will be a useful assistance to identification.

FIELD-CHARACTERS. In this section a discriminating analysis has been made of the bird's appearance, flight, notes, and song, and other characteristic habits observable in the field. Comparative notes are also given to show how it differs from other birds which might appear similar, unless the distinguishing characters were observed. It is often not possible to give an infallible guide to identification in the field: moreover, different observers note different characteristics, and it is often very difficult to put into words exactly how one identifies a bird in the field. The chief aim of the writers of this section has been to indicate the points on which attention should be concentrated.

BREEDING-HABITS. Here the salient facts have been briefly summarized, but owing to exigencies of space, only the more typical *nesting sites* and *materials* are described. Similarly with the *eggs*, it would be impossible to give details of each variety, but the usual types are described; and where known some details as to *breeding-season*, *incubation period* and share of the sexes are added, as well as the number of broods reared in the season.

FOOD. For this section, besides the modern works of Newstead, Collinge, Florence and others, which treat of the subject from the economic point of view, the results of post-mortem examinations which have been published in various zoological journals during the last seventy years have been tabulated and briefly summarized.

DISTRIBUTION. This is divided into two sections, one devoted to the British Isles, and the other "Abroad." The latter is in general terms, while the former is detailed, especially in species which are local, rare, or limited in their distribution. References are given to the original records of "vagrants" which have been observed on only a few occasions, while in other cases a more

general reference prefixed by the abbreviation *cf.* is given. These sections have already appeared in "A Hand-List of British Birds," but have since been thoroughly revised and brought up to date.

MIGRATIONS. The accounts of the migratory movements are based on those given in the "Hand-List of British Birds," but have been thoroughly revised in the light of fresh material that has been gathered since in the "Reports of the Migration Committee of the British Ornithologists' Club," the annual "Reports on Scottish Ornithology," and Mr. Eagle Clarke's "Studies of Bird Migration." In some species new sections on this subject have been added, and in most cases extreme dates within which the various movements have been known to begin and end have been added, and it is hoped that these will prove useful. Owing to exigencies of space much detail cannot be given, so that the accounts must not be taken as indicating more than an outline of the chief movements undertaken by each species.

AUTHORS. The authors of the various sections when unsigned are as below, and where any other author has written a particular section the name of that author will appear either at the beginning or at the end of the section for which he is responsible. Each of the authors mentioned in the following list has also revised the proof-sheets of the whole work.

Keys, Descriptions of Orders, Families and Genera Nomenclature	}	E. HARTERT.
Descriptions, Characters and Allied Forms (unsigned)	}	H. F. WITHERBY.
Descriptions, Characters and Allied Forms of Ducks, Waders and probably other groups (all signed)	}	A. C. JACKSON.
Field-characters	{	C. OLDHAM, except where otherwise stated.
Breeding-habits Food	}	F. C. R. JOURDAIN.

Distribution—British Isles	{ H. F. WITHERBY, assisted by N. F. TICEHURST and F. C. R. JOURDAIN.
Distribution—Abroad	{ E. HARTERT, assisted by F. C. R. JOURDAIN.
Migrations	N. F. TICEHURST.

ILLUSTRATIONS. The illustrations, both text and plates (coloured and black and white), are intended solely as aids to identification. It is proposed to give full figures of certain nearly allied forms as well as of those juveniles of species breeding in the British Isles which differ considerably from the adults; otherwise the illustrations will be of some part of a bird, chosen in each species to show some characteristic feature.

ADDITIONS AND CORRECTIONS. Attention will be drawn from time to time on the cover to important additions or corrections during the progress of the work, and full details of such additions or corrections will be given in the last part, so that the work when complete may also be up to date. Part I. was printed before the war, but its issue was suspended. Slight alterations in the distribution of some species are necessitated by observations since published, and these details will be found on the cover. The Shetland Starling has now been proved to be distinct and must be added as below. These additions bring Part I. up to the date of January 1, 1919.

January, 1919.

THE EDITOR.

13a. *Sturnus vulgaris zetlandicus* Hart.—THE SHETLAND STARLING.

STURNUS VULGARIS ZETLANDICUS Hartert, Nov. Zool., xxv., p. 329 (1918—Shetland Islands. Type, North Yell).

Sturnus vulgaris Ogilvie-Grant, Bull. B.O.C., xxxiii, p. 63 (1913).

DESCRIPTION.—*Adults*.—Like *S. v. vulgaris* but with longer wing and wider bill, thus intermediate between *S. v. vulgaris* and *S. v. faroensis*.

Juvenile.—Like that of *S. v. faroensis*, both upper- and under-parts being black-brown and much darker than in *S. v. vulgaris*. Greyish-white of chin and centre of throat and streaks on belly thus more contrasted with general colour.

Measurements.—♂ wing 130-138 mm., tail 61-69, tarsus 28-31, bill from nostril 18-21, bill width at nostril 7.5-8.5 (12 measured). ♀ wing 128-132. Wing formula and rest of structure as in *S. v. vulgaris*.

DISTRIBUTION.—*Shetland Islands*, but not including Fair Isle, where there appears to be a mixture of the two races.

GLOSSARY OF TERMS.

- ACUMINATE.**—Tapering to a sharp point.
- ADULT BIRD.**—Strictly one which has reached the period when the body has acquired its full development, but in this work has chief reference to the plumage.
- ÆGITHOGNATHOUS.**—Like the *Ægithognathæ*, the fourth suborder of *Carinatæ* (birds with a keeled sternum) in Huxley's Classification. These four suborders are based on certain modifications in the bony palate, and the distinguishing feature of the present one is that the vomer is broad and truncated in front, lying between the separate maxillo-palatines.
- AFTERSHAFT.**—The small counterpart of a typical feather that springs from the inner surface of the quill common to both; often merely indicated or vestigial.
- ALAR BAR.**—A bar across the wing—often formed by the tips of the feathers of one of the series of wing-coverts differing in colour from the rest of the feathers.
- ALBINISM.**—The abnormal absence of colour, partial or total.
- AMBIENS MUSCLE.**—Arises from the pelvis and runs down the inner side of the thigh, passes the knee as a narrow tendon and then forms one of the heads of the deep flexor muscle of the 2nd and 3rd toes. Birds were divided by Garrod into two great classes, those with and those without the *ambiens*. The first includes the Game-birds, Gulls, Divers, Cormorants, Geese and Ducks, Hawks and Cuckoos: the latter the Owls, Swifts, Kingfishers, Hoopoes, Woodpeckers, Passeres, Herons, Auks and Grebes.
- ANTRORSE.**—Directed or bent forwards, used of nasal tufts and rictal bristles.
- ASYMMETRICAL.**—Composed of two dissimilar halves.
- AXILLARY.**—Of or belonging to the axilla (armpit). (See fig., p. *xv.)
- BASI-PTERYGOID.**—The name given to a bony projection from one of the bones of the roof of mouth (Pterygoid) connecting it with the base of the skull.
- BOOTED.**—Used of the **TARSUS** to denote that the usual scales are fused so as to form a continuous **LAMINA**.
- BROOD-SPOT OR INCUBATION-SPOT.**—The patch of skin of varying extent along the centre of the bird's abdomen and breast and between the two halves of the ventral feather tract that shortly before incubation begins becomes void of down and greatly thickened.
- CALAMUS.**—The hollow, transparent base of a feather.
- CARINATÆ.**—See **STERNUM**.
- CARPUS.**—The wrist. The carpal joint of the wing is that one forming the forward prominence when the wing is closed.

- CERE.**—The bare and sometimes swollen and distinctively coloured skin in which the nostrils are situated at the base of the bill—a prominent feature in the Hawks. (See fig., p. *XIII.)
- COMPRESSED.**—Pressed together, i.e. flattened in a horizontal plane—laterally compressed—flattened in a vertical plane.
- CORNEOUS.**—Horny, hard.
- CULMEN.**—The central longitudinal ridge of the upper mandible. (See fig., p. *XVI.)
- CUNEATE.**—Wedge-shaped—e.g. the two sides of a feather or tail are rapidly graduated to a point, the long axis being not greatly in excess of the transverse (*cf.* LANCEOLATE).
- CUTTING EDGES OF BILL.**—The more or less sharp lower margins of the upper jaw and upper margins of the lower jaw. (See fig., p. *XVI.)
- DEGENERATE FEATHER.**—One whose structure has been so modified that many of its essential features may be apparently or actually absent.
- DESMOGNATHOUS.**—Like the *Desmognathæ*, the third suborder of *Carinatae* in Huxley's Classification. It is based on the fact that in the groups comprised in it (Ducks, Geese and Swans, Flamingo, Storks, Herons, Ibis, Spoonbill, Cormorants, Birds of Prey, Cuckoos, Bee-eater, Hoopoe and Roller, amongst British birds) the vomer is more or less suppressed or absent (*cf.* *ÆGITHOGNATHOUS*).
- DIASTATAXIC.**—Arranged separately. Divided.
- DIMORPHISM.**—A difference in form, and also used generally in ornithology for a difference in colour (strictly dichromatism), constantly exhibited by different individuals of the same species. Sexual dimorphism is common in birds, but individual dimorphism is rare.
- DISTAL.**—A part remote from the centre or central line of the body as opposed to a part nearer the centre (*PROXIMAL*).
- DOWN.**—The first covering of the young of many birds, but present also beneath the feathers in certain families (Ducks, Geese, etc.) throughout life. (See *NEOSSOPTILES* and *TELEOPTILES*.)
- EGG-TOOTH.**—The conical horny excrescence situated towards the distal extremity of the culmen in the newly-hatched chick: it is used to crack the shell at birth, and is shortly afterwards shed.
- EMARGINATED.**—Cut out or cut away in a slanting direction.
- ERYTHRISM.**—The abnormal replacement of other colours, generally green or yellow, by red.
- ETHIOPIAN REGION.**—The name of one of the six Zoo-geographical Regions of the world, comprising Africa south of the Palearctic Region and southern Arabia (*cf.* *PALÆARCTIC* and *NEARCTIC REGION*).
- FILOPLUME.**—A hair-like feather consisting of calamus and rachis with but very few radii.
- FESTOONED.**—Indented or scalloped.
- GAPE.**—The angle formed by the lower border of the upper jaw and the upper border of the lower jaw, when the bill is open.
- GONYS.**—The prominent ridge formed by the junction of the two halves of the lower jaw towards its tip. Specially marked in the Gulls. (See fig., p. *XV.)
- GRADUATED.**—Of gradually increasing or decreasing length or width.
- HALLUX.**—The first digit of the foot (i.e. the great toe). The toe which in most orders is the only one that is directed backwards (i.e. hind toe); very variable in size and in some species absent

- HUMERUS.**—The bone of the upper arm, i.e. the most proximally situated bone of the wing.
- HYOID.**—The cartilaginous and bony framework of the tongue.
- IRIS.**—The, often distinctively, coloured portion of the eye, in the form of a circular curtain, having a central circular aperture, which is called "the pupil." (See fig., p. *XVI.)
- JUVENILE BIRD.**—As here used refers to a bird in its first covering of true feathers, which usually immediately succeeds the down of the nestling.
- KNEE.**—The forwardly directed joint in the upper part of the bird's leg, always hidden by feathers. The more evident, distal and backwardly-directed joint is often erroneously called the bird's knee, but is in reality the ankle.
- LAMELLÆ.**—Small plates or scales.
- LAMELLATED.**—Covered with lamellæ (small plates or scales).
- LAMELLIROSTRES.**—Cuvier's name in 1817 for the Anatidæ.
- LAMINA.**—A small thin plate.
- LANCEOLATE.**—Lance-shaped, e.g. a feather or a bird's tail is said to be lanceolate when the two sides are evenly graduated to a point; the long axis being greatly in excess of the transverse (*cf.* CUNEATE).
- LOBES.**—Fibrous, skin-covered outgrowths such as those of the toes of the Coot.
- MALAR.**—Of or belonging to the cheek. In birds used to denote the region extending down the side of the throat from the base of the lower jaw. (See fig., p. *XVI.)
- MANDIBLE.**—The jaw—generally used with the qualifying adjectives upper or lower, including the horny sheath as well as the bone.
- MELANISM.**—The abnormal presence of black or very dark coloured plumage.
- NAIL.**—The term applied to the inverted shield-shaped horny plate at the tip of the upper mandible in the Ducks, Geese and Swans.
- NARES.**—The cavities of the nose; anterior nares=the outside openings of the nostrils; posterior nares=the openings of the nose into the throat. In ornithology the word nares alone is often loosely applied to the external apertures.
- NEARCTIC REGION.**—One of the six great Zoo-geographical regions of the world, comprising North America and reaching into Mexico (*cf.* PALÆ-ARCTIC REGION).
- NEOSSOPTILES.**—A term applied to the down-feathers which first clothe the newly-hatched bird. They are characterized by the calamus being very short, the rachis ill defined or absent, the rami long and slender, the cilia usually absent and the aftershaft always so in British species. In some species the neossoptiles are either nearly or entirely suppressed.
- NESTLING.**—Here used to refer to a bird from the time it is hatched until the growth of the TELEOPTILES (*q.v.*).
- NUCHAL.**—Of or belonging to the nape. The region of the junction of the neck with the back of the head.
- OIL GLANDS.**—The only glands of the skin in birds, consisting of two somewhat heart-shaped bodies lying side by side just above the root of the tail and opening backwards on to the surface by several orifices frequently prolonged into a projecting nipple which in some families is surrounded by a circle of down and stiff feathers. Best developed in the water birds.
- OPERCULUM.**—A cover or lid: applied to the fleshy flap covering the nostrils and external aperture of the ears in some birds.

ORBITAL.—Of or belonging to the orbit, the bony cavity containing the eye and its external mechanism.

PALÆARCTIC REGION.—The name given to one of the six great regions into which Selater demonstrated that the world could be divided for the purpose of considering and classifying the geographical distribution of its fauna. It comprises Europe, Asia to the Indus, the Himalayas and Yang-tse-Kiang, Africa about to middle of the Sahara, and the Atlantic Islands.

PALMATE.—Spread out like the palm of the hand.

PAPILLA.—A small conical eminence.

PECTINATE.—Furnished with teeth like a comb.

PLANTAR.—Of or belonging to the sole of the foot.

POWDER-DOWNS.—The down which clothes certain tracts in various groups of birds, sometimes on the featherless spaces and sometimes amongst the contour feathers. The barrel as it grows splits into numerous brush-like barbs and barbules, instead of forming a central shaft, and these continuously disintegrate into a white powder which permeates the plumage. They are found amongst British birds in the Herons and Harriers.

PROXIMAL.—A part nearer to the centre or central line of the body as opposed to one more remote (*DISTAL*).

PTERYLOSIS.—The consideration of plumage with regard to the distribution of its growth.

PULLUS.—A chick. The naked or down-covered young of birds. (See *NESTLING*).

RADI.—The lateral branches of the rami, which in turn bear cilia or hooklets by means of which adjacent rami of a feather are held together.

RAMI.—The lateral branches from the shaft of a feather which in mass compose the inner and outer webs.

RECTRICES.—The large quill feathers of the tail. (See fig., p. *xvi.)

REMIGES.—The principal feathers of the wing (flight feathers). Consist of two series, the primaries attached to the bones of the hand, and the secondaries, attached to the ulna (inner bone of forearm). (See fig., p. *xvi.)

RETICULATION.—Used to denote the plates covering the tarsus and toes in certain birds; they are of various shapes but are most often six-sided and small, not arranged in definite rows and do not overlap (*cf. SCUTE*).

RHACHIS.—The opaque part of the main central shaft of a feather (*cf. CALAMUS*).

RICTAL.—Of or belonging to the gape.

SCANSORIAL.—Of or belonging to the Scansores, the first Order in Illiger's (1811) classification. As here used refers to birds capable of climbing.

SCUTE.—Literally a shield, used to denote the scales covering the tarsus and toes; they are usually comparatively large and overlap each other (*cf. RETICULATION*).

SCUTELLATE.—Covered with *SCUTES*.

SHAFT.—The central horny portion of a feather, consisting of the *CALAMUS* and *RHACHIS*.

SINUATED.—Cut or sloped in a wavy manner.

SPECULUM.—A name used for any patch of feathers on the wing differing markedly in colour from those near them—especially applied to the metallic patch on the wing-feathers of the freshwater ducks.

SQUARE.—Applied to the distal extremity of a feather or group of feathers when that extremity forms roughly a right angle with either of the lateral borders (*cf. LANCEOLATE, CUNEATE, GRADUATED*).

STERNUM.—The breastbone. Birds are divided into two great divisions, dependent on the presence or absence of a deep forwardly projecting plate (keel) down the centre of this bone. The development of this keel is directly dependent on the power of flight and the two divisions are known as (1) the *Carinatæ* (those with keels) and (2) the *Ratitæ* (those without); *Ratitæ* do not occur in the British Islands.

SUBULATE.—Awl-shaped.

SUPERCILIARY.—Referring to the part immediately above the eye.

SYNDACTYLOUS.—Having two toes coalescent.

TARSUS.—The most conspicuous portion of the bird's leg, and except in a few genera, covered with flattened horny scales or *SCUTES*. The toes are attached to its lower extremity. (See fig., p. *XIII.)

TIBIA.—The shin-bone—generally the longest portion of the bird's leg, extends from the knee joint to the tarsal joint (*cf.* *TARSUS*).

TELEOPTILES.—The feathers or down which immediately succeed the *NEOSSOPTILES* (*q.v.*).

TROPICAL.—Of or belonging to the tropics, that portion of the globe between the tropics of Cancer and Capricorn, i.e. 23° N. and S. of the equator.

UROPYGIUM.—The rump.

WEB.—I. The fleshy membrane uniting (or attached to the sides of) the toes of water-birds.

II. The collected rami on either side of the shaft of a feather, generally used with the qualifying adjectives inner or outer. (See fig., p. *xv.)

WING-BAR.—See *ALAR BAR*.

XANTHOCHROISM.—The abnormal replacement of another colour, generally green, by yellow.

ZYGODACTYLE.—Vieillot's name (1816) for the group of birds having two toes pointing forwards and two backwards. Practically the same as Illiger's *SCANSORES* (*q.v.*).

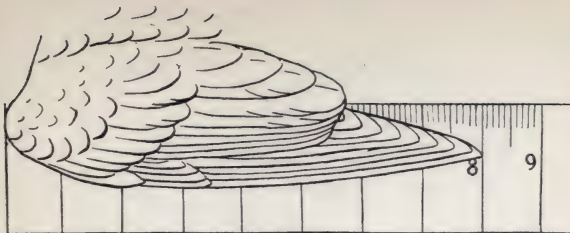
♂—Male.

♀—Female.

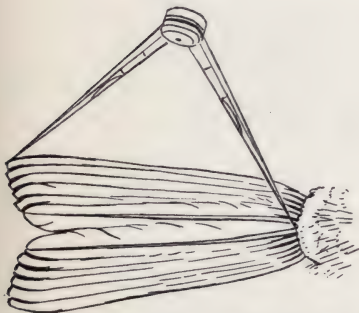
SCALE

OF MILLIMETRES AND INCHES.

<i>Inches</i>	<i>Millimetres = mm.</i>	<i>Millimetres = mm.</i>	<i>Inches and Decimals</i>	<i>Inches and Fractions</i>
$\frac{1}{8}$	3.175	1	.039	
$\frac{1}{4}$	6.350	2	.078	
$\frac{3}{8}$	9.525	3	.118	
$\frac{1}{2}$	12.700	4	.157	
$\frac{5}{8}$	15.875	5	.196	or about $\frac{3}{16}$
$\frac{3}{4}$	19.050	8	.315	„ $\frac{5}{16}$
$\frac{7}{8}$	22.225	10 (=1 cm.)	.393	„ $\frac{3}{8}$
1	25.400	15	.590	„ $\frac{19}{32}$
2	50.799	20	.787	„ $\frac{25}{32}$
3	76.199	30	1.181	„ $1\frac{3}{16}$
4	101.600	40	1.574	„ $1\frac{9}{16}$
6	152.399	50	1.968	„ $1\frac{31}{32}$
12	304.800	60	2.362	„ $2\frac{3}{8}$
		70	2.756	„ $2\frac{3}{4}$
		80	3.149	„ $3\frac{5}{32}$
		90	3.543	„ $3\frac{17}{32}$
		100 (=10 cm.)	3.937	„ $3\frac{15}{16}$



Showing the method of measuring the wing used by us. The wing is pressed out on the rule until it is quite flat, and thus the longest possible measurement is consistently obtained. In very large birds (e.g. Eagles, Swans) a tape is used stretched from the carpal joint to the tip of the longest feather along the upper-side of the wing; in each case when a tape is used it will be mentioned.



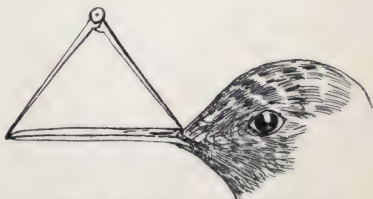
Showing the method of measuring the tail used by us. One end of the dividers is placed between the tail-feathers and pressed to the skin, while the other is passed to the tip of the longest feather.



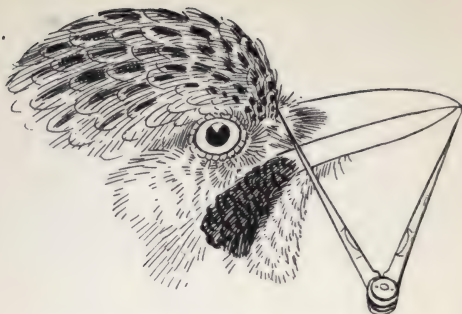
Showing the method of measuring the tarsus used by us.



Showing the cere and the method of measuring the bill from the cere to the tip.

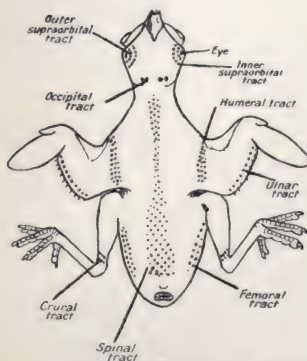


Showing the method of measuring the bill from the end of feathering to the tip.

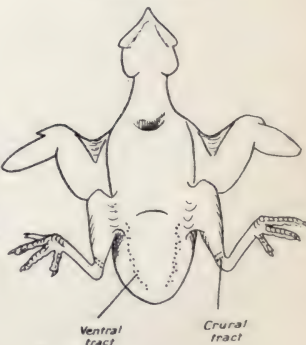


Showing the method used by us in measuring the bill from its tip to the base of the skull. One end of the dividers is pressed along the culmen to the base of the skull, which is usually concealed by feathers.

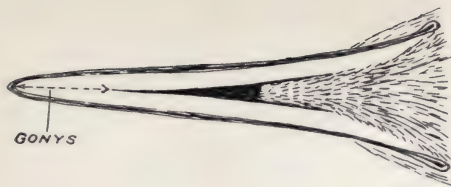
UPPER-PARTS.



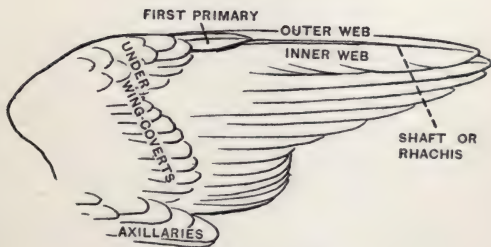
UNDER-PARTS.



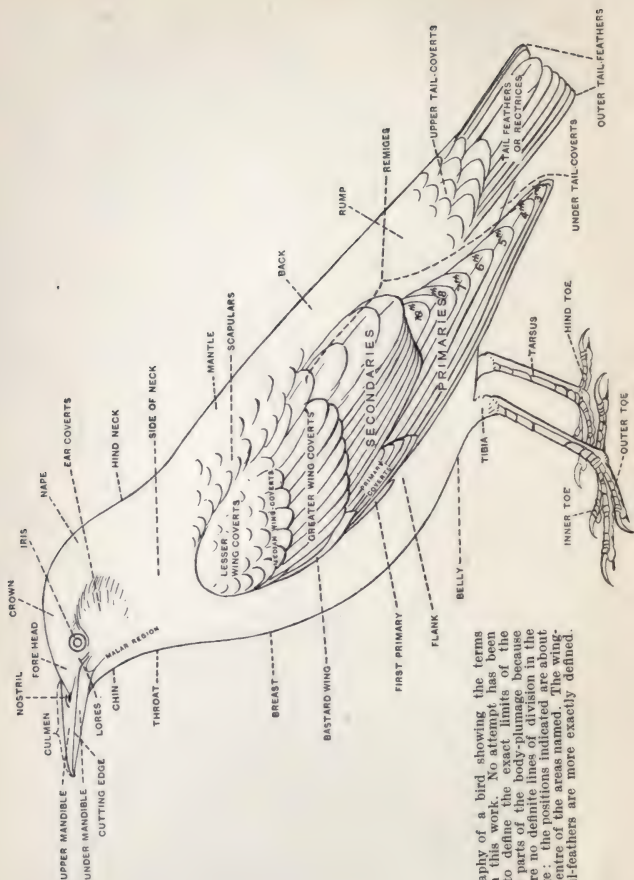
Topography of the nestling to show the down-tracts referred to, especially in the descriptions of nestling Passeres.



View from below and side of bills of Gulls to show the portion called the gonys.



Topography of the under-wing.



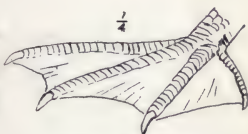
Topography of a bird showing the terms used in this work. No attempt has been made to define the exact limits of the various parts of the body-plumage because there are no definite lines of division in the plumage; the positions indicated are about in the centre of the areas named. The wing- and tail-feathers are more exactly defined.

A PRACTICAL HANDBOOK OF BRITISH BIRDS.

KEY TO THE ORDERS.

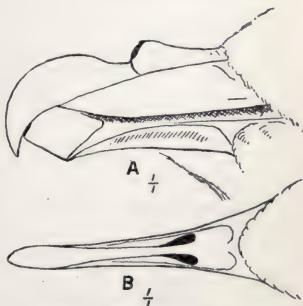
It must be understood that this "Key" is not a scientific definition of the Orders, but that it applies only to British birds. It is intended as an aid to the beginner in placing a bird unknown to him.

- 1 { Hind toe connected by a web with the inner toe :
Steganopodes (Cormorants and Gannets)
 Hind toe not connected by a web with the inner toe 2



Gannet (*Sula bassana*).

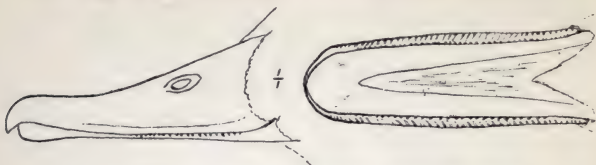
- 2 { Nostrils in one or two tubes, no rictal bristles:
Tubinares (Petrels, Shearwaters, Albatroses)
 Nostrils not tubular or else (Goatsuckers) strong rictal bristles present . . . 3



A. Fulmar Petrel (*Fulmarus glacialis*).

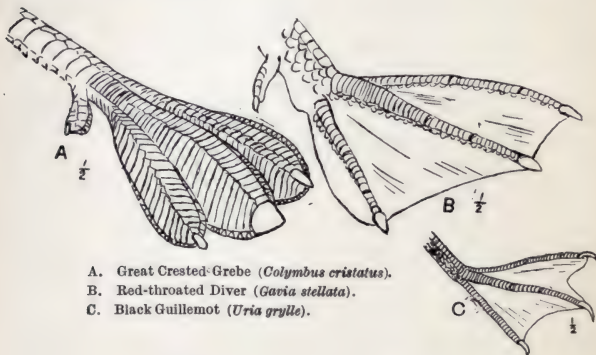
B. (from above). Manx Shearwater (*Puffinus puffinus*).

- 3 { Cutting-edges of bill smooth or festooned, but not lamellated or sharply serrated 4
Cutting-edges of bill lamellated or strongly serrated 20



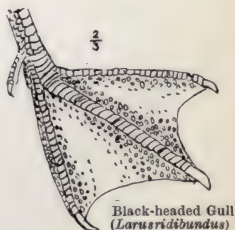
Wigeon (*Anas penelope*), to show lamellated cutting-edges of bill.

- 4 { Legs inserted near vent, far behind middle of body 5
Legs inserted about middle of body 6
- 5 { Hind toe present *Colymbi* (Grebes and Divers)
Hind toe absent *Alcae* (Auks)



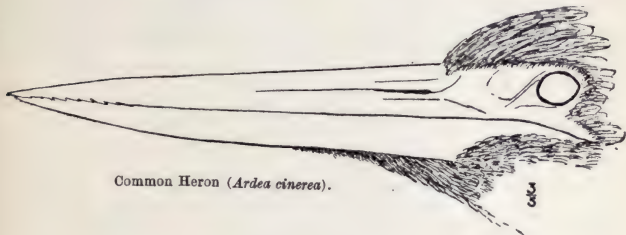
A. Great Crested-Grebe (*Colymbus cristatus*).
B. Red-throated Diver (*Gavia stellata*).
C. Black Guillemot (*Uria grylle*).

- 6 { Anterior toes not or only incompletely webbed 7
Anterior toes fully webbed :
Lari (Terns, Gulls, and Skuas).



Black-headed Gull (*Larus ridibundus*)

- 7 { Lower portion of thigh not feathered (with one exception [Little Bittern] where lores bare, bill long and straight, head flattened on top) 8
 Lower portion of thigh feathered 10
- 8 { Loral or orbital region or both bare :
Gressores (Storks, Ibises and Herons)
 Loral and orbital regions fully feathered 9

Common Heron (*Ardea cinerea*).

- 9 { 1st visible primary generally longest or equal to 2nd (in few instances, such as *Vanellus*, *Chettusia*, *Burhinus*, shorter than 2nd); distinct narrow and stiff rudimentary real 1st primary, concealed by coverts :

Limicolæ (Waders)

- 1st primary shorter than 2nd, no distinct rudimentary primary: *Alecto-*
rides (Bustards, Cranes, and Rails)



A



B



C

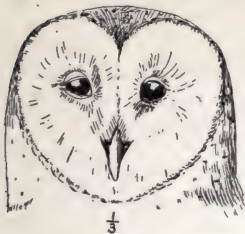
Rudimentary real 1st primaries of—

- A. Lapwing (*Vanellus vanellus*).
 B. Grey Plover (*Squatarola squatarola*).
 C. Common Snipe (*Gallinago gallinago*).

- 10 { Nostrils opening in soft, fleshy membrane :
Columbæ (Pigeons)
 Nostrils in sharply defined cere at base of upper mandible 11
 No cere or soft, fleshy membrane at base of upper mandible 12

Wood-Pigeon
(*Columba palumbus*).

- 11 { Eyes very large and directed forward, toes feathered or with bristles *Striges* (Owls)
 { Eyes moderate and laterally directed, toes quite bare: *Accipitres* (diurnal birds of prey)



Barn-Owl (*Tyto alba*) and Peregrine Falcon (*Falco peregrinus*).

- 12 { Toes feathered, no hind toe: *Pterocletes* (Sand-Grouse)
 { Toes feathered or bare, hind toe present 13



Pallas's Sand-Grouse (*Syrhaptes paradoxus*).

- 13 { Ten or twelve tail-feathers 14
 { More than twelve tail-feathers (with one exception—*Coturnix* [Quail]—where tail hidden by coverts, and primaries stiff and rounded): *Gallinæ* (Game-birds)

- 14 { Ten fully developed tail-feathers, wing over 80 mm. 15
 { Ten fully developed tail-feathers and two small soft ones on top of lateral tail-feathers (two toes in front, two behind): *Pici* (Woodpeckers)
 { Twelve fully developed tail-feathers, or else wing not over 60 mm. 17



Green Woodpecker (*Picus viridis*).

- 15 { With a large crest *Upupæ* (Hoopoes)
 { Without a crest 16



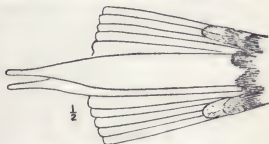
Hoopoe (*Upupa epops*).

- 16 { Two toes in front and two behind: *Cuculi* (Cuckoos)
 Three toes in front and one behind, claw of middle toe pectinated,
 nostrils tubular *Caprimulgi* (Goatsuckers)
 All four toes in front, or else tail with spines. *Cypseli* (Swifts)



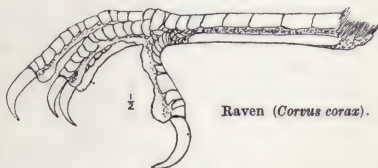
A. Cuckoo (*Cuculus canorus*). B. Nightjar (*Caprimulgus europæus*). C. Swift (*Apus apus*).

- 17 { Middle pair of tail-feathers elongated:
Meropes (Bee-Eaters)
 Middle pair of tail-feathers not elongated 18



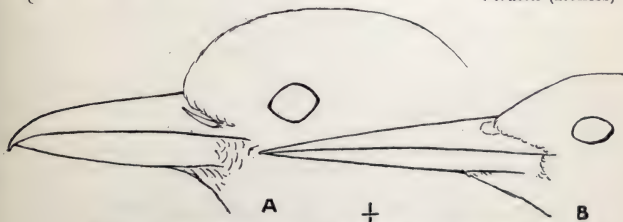
Bee-Eater (*Merops apiaster*).

- 18 { All toes unconnected:
Passeres ("perching
 birds")
 Some of the front
 toes syndactylous,
 i.e. tightly con-
 nected in a common
 sheath 19



Raven (*Corvus corax*).

- 19 { Bill long, straight, and pointed, about as long as tail:
Halcyones (Kingfishers)
 Bill short and curved, less than one-third of the tail:
Coraciæ (Rollers)



A. Roller (*Coracias garrulus*).

B. Kingfisher (*Alcedo ispida*).

- 20 { Bare portion of tibia over 200 mm., tarsus many times longer than toes *Phoenicopteri* (Flamingoes)
 { Bare portion of tibia (if any) not more than 30 or 40 mm., tarsus (if at all) less than twice as long as toes :
Anseres (Swans, Geese, and Ducks)

ORDER PASSERES.

This Order consists of the ordinary perching birds and contains nearly half of the known species of birds. The Order is divided into several suborders, of which in Europe only the largest, the so-called *Oscines* (singing birds), is found.

The numerous families are difficult to define, and the limits of some of them are so far very unsatisfactory. On account of great variation of form, the Order is difficult to diagnose by external characters, Orders of birds being chiefly founded on anatomical structure. The palate is ægithognathous; never more than fifteen cervical vertebræ; deep plantar tendons free; ambiens absent; no basi-ptyergoid processes; young hatched naked and helpless.

There are always four toes, first or hallux being directed backwards and not reversible, always jointed at same level as the others. An oil-gland is always present, but it is naked, not tufted. Wing with nine or ten obvious primaries; tail usually with twelve, in a few genera only with ten, rectrices. Land-birds; feet never webbed. Cosmopolitan.

Key to families of Order PASSERES.

- 1 { Tarsus posteriorly rounded and divided into scutes *Alaudidæ* (Larks)
 { Tarsus posteriorly ridged and not scutellated 2
- 2 { 1st primary rudimentary and hidden; outermost obvious primary more than half as long as next, often longest ("nine primaried" Passeres) 3
 { 1st primary obvious, though sometimes small ("ten-primaried" Passeres) 5
- 3 { Longest primary more than twice as long as secondaries :
Hirundinidæ (Swallows)
 { Longest primary less than twice as long as secondaries 4

- 4 { Bill short and thick, more or less conical :
 Fringillidæ (Finches and Buntings)
 Bill thin and slender *Motacillidæ* (Wagtails and Pipits)
- 5 { Wing over 150, tail over 100 mm., nostrils entirely covered by stiff
 antrorse feathers *Corvidæ* (Crows)
 Wing under 150, tail under 100 mm. 6
- 6 { No obvious rictal bristles 7
 Obvious rictal bristles 11
- 7 { With crest ; wing over 100 mm. : *Bombycillidæ* (*Ampelidæ*) (Waxwings)
 Without crest ; or else wing under 80 mm. 8
- 8 { Tail-feathers pointed and stiffened ; bill thin and curved :
 Certhiidæ (Creepers)
 Tail-feathers not pointed and stiffened ; bill not curved 9
- 9 { Tail under 40 mm. ; nostrils bare, with membrane : *Troglodytidæ* (Wrens)
 Tail over 40 mm. ; nostrils bare, with membrane : *Sturnidæ* (Starlings)
 Tail 40 mm., or over ; nostrils covered by stiff antrorse feathers . . 10
- 10 { Bill shorter than head, base of culmen feathered . . . *Paridæ* (Tits)
 Bill as long as head, base of culmen bare . . *Sittidæ* (Nuthatches)
- 11 { Bill curved, strong, with sharp "tooth" on cutting-edges of upper
 mandible *Laniidæ* (Shrikes)
 Bill strong ; bright yellow in plumage ; wing over 120 mm. :
 Oriolidæ (Orioles)
 Bill strong, tapering laterally from middle ; no bright yellow in plumage ;
 wing under 120 mm. *Accentoridæ* (Accentors)
 Bill thin or widened, flat, never as strong as in *Oriolidæ*, nor tapering
 laterally as in *Accentoridæ* ; if somewhat stronger, then bird larger
 (Thrushes) . . . *Muscicapidæ* (Flycatchers, Warblers, and Thrushes)

FAMILY CORVIDÆ.

Largest *Passeres*. Ten distinct primaries, 1st of which is always much shorter than 2nd, but longer than primary-coverts. Tarsus ridged posteriorly and not divided into scutes. Bill strong and powerful, but fairly long, not much, if at all, shorter than head. Nostrils not with an operculum or membrane, but covered with bristles directed forward. Young more or less similar to adults. One annual moult. Almost cosmopolitan, but more developed in Northern Hemisphere.

Key to genera of family CORVIDÆ.

- | | | | |
|---|---|--|----------------------------|
| 1 | { | Tail longer than wing, strongly graduated; first primary very narrow, small, and stiff | <i>Pica</i> , p. 21 |
| | | Tail shorter than wing, tip slightly graduated, rounded or almost straight; 1st primary regular, half, or more than half, as long as 2nd | 2 |
| 2 | { | Bill and feet red; plumage uniform black | <i>Pyrrhocorax</i> , p. 31 |
| | | Bill black, feet brownish flesh-colour; plumage vinous with white, black, and grey; blue on wings | <i>Garrulus</i> , p. 27 |
| | | Bill and feet black; plumage entirely black, brown and white, or black and grey | 3 |
| 3 | { | White tips to tail-feathers; body-plumage brown with drop-like white spots | <i>Nucifraga</i> , p. 23 |
| | | No white tips to tail-feathers, body-plumage black or black and grey | 4 |
| 4 | { | Bill under 40 mm., end of tail almost square | <i>Colæus</i> , p. 18 |
| | | Bill over 40 mm., end of tail rounded | <i>Corvus</i> , p. 8 |

Genus CORVUS L.

CORVUS Linnaeus, Syst. Nat., ed. x, i, p. 105 (1758—Type: *C. corax* by tautonymy "*corvus*," the Raven; also by subsequent designations).

Contains Ravens, Crows, and Rooks. Tail shorter than wing, slightly graduated or rounded at end. 1st primary at least half as long as 2nd; 3rd and 4th primaries longest; primaries exceed longest secondaries by more than length of tarsus. Four outermost primaries with inner webs sinuated. Coloration black or black and grey, the black often with purple, violet, or steel-blue gloss; some tropical species black and white.

Nearly cosmopolitan, but absent from New Zealand, some Polynesian Islands, Madagascar, South America, and Lesser Antilles. Four species in British Isles.

Key to species of genus CORVUS.

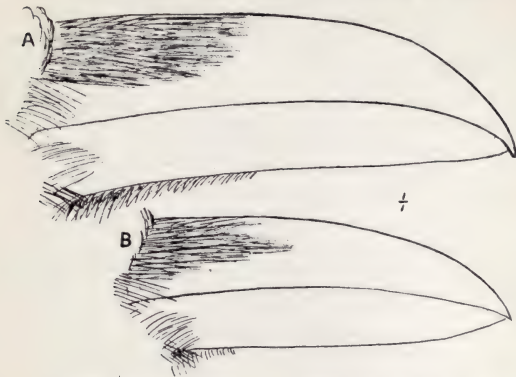
- | | | | |
|---|---|--|------------------------------|
| 1 | { | Entirely black (with more or less metallic reflections) 2 | |
| | | Parti-coloured (grey and black) | <i>C. cornix</i> , p. 11 |
| 2 | { | Much larger, wing over 380 mm. | <i>C. corax</i> , p. 9 |
| | | Much smaller, wing under 380 mm. | 3 |
| 3 | { | 1st primary shorter than 9th, 2nd shorter than 6th | <i>C. corone</i> , p. 13 |
| | | 1st primary equal to or longer than 9th, 2nd longer than 6th | <i>C. frugilegus</i> , p. 15 |

CORVUS CORAX

1. *Corvus corax corax* L.—THE RAVEN.

CORVUS CORAX Linnæus, Syst. Nat., ed. x, i, p. 105 (1758—Europe. Restricted typical locality: Sweden).

Corvus corax Linnæus, Yarrell, II, p. 259; Saunders, p. 241.



A. Raven (*Corvus c. corax*).

B. Carrion-Crow (*C. c. corone*).

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole plumage black; nasal and rictal bristles glossy-black; crown glossed greenish or purplish; back of neck and ear-coverts greenish-black; mantle, scapulars, back and upper tail-coverts glossed blue or slightly reddish-purple; chin glossed green; throat and upper-breast usually more reddish-purple (feathers of throat long, narrow, and lance-shaped); rest of under-parts glossed green or blue-purple; axillaries and under wing-coverts brown-black, glossed blue and reddish-purple; tail glossed green and reddish-purple; outer primaries, primary-coverts, and bastard-wing glossed green, inner primaries more bluish; secondaries and all wing-coverts glossed reddish-purple; under-down and feather-bases brownish-white like Rook. This plumage is acquired by complete moult from August to October. *Summer.*—No moult. Abrasion makes whole bird less glossy and wings and tail especially become browner.

Nestling.—Down, mouse-brown, plentiful; distribution, occipital, humeral, spinal, femoral, ventral (description from skin).

Juvenile.—Upper-parts brown-black with little gloss compared to adult; under-parts brown with some greenish gloss on chin but with scarcely any on rest of under-parts; tail, wings, and wing-coverts much as in adult but not so brightly glossed.

First winter and summer. Male and female.—Like adult but tail, wings, and wing-coverts much browner, gloss becoming almost entirely worn off by first autumn. The juvenile body-plumage and some lesser and median coverts are moulted in autumn but not rest of wings or tail.

Measurements and structure.—♂ wing 400-436 mm., tail 215-250, tarsus 64-73, bill from nostril 44-52, from skull 72-80, depth at angle of lower mandibles 25-28, at base 28-32 (10 measured). ♀ wing 395-420. Primaries: 1st between 7th and 8th, sometimes shorter than 8th, 4th longest, 3rd sometimes equal but usually 3-12 mm. shorter, 2nd 15-40 shorter, 6th 40-65 shorter; 2nd to 5th emarginated outer webs. Secondaries between 8th and 10th primaries, tips slightly rounded. Tail rounded. Bill massive, culmen curved. Numerous and strong rictal and nasal bristles, latter completely covering nostrils.

Soft parts.—Bill, legs, and feet black; iris dark-brown.

CHARACTERS AND ALLIED FORMS.—*C. c. varius* (Færoes) has longer wing and whiter feather-bases, *C. c. hispanus* (Spain) heavier, deeper bill, *C. c. sardus* (Sardinia) has a deeper bill and shorter wing, *C. c. canariensis* (Canaries) and *C. c. tingitanus* (north-west Africa) have short, deep bills, *C. c. umbrinus* (Sahara, Arabia, east Persia) has a thinner bill and is partly brownish, *C. c. laurencei* (Palestine, north-west India to Greece) is intermediate between last and typical form; other forms differ in size of bill and wing. Large size and heavy bill distinguish Raven specifically.

FIELD-CHARACTERS.—At close quarters large size distinguishes it from any other crow. Lanceolate feathers of throat give old bird a bearded appearance. In flight, massive bill and head project far in advance of wings, and suggest longer-necked bird than a crow. Note, a frequently-uttered deep “pruk, pruk,” infallible guide to identity.

BREEDING-HABITS.—Formerly widely distributed, breeding in tall trees all over the country, now practically confined to mountainous districts and sea-cliffs, and nesting almost entirely on ledges of rocks. *Nest.*—Solidly built of sticks, heather-stalks, rarely seaweed, mixed with earth, lined warmly hair and wool, sometimes a little grass. *Eggs.*—4-6, sometimes only 3 or even fewer, and rarely 7; ground-colour light blue to greenish, generally freely blotched and spotted brown or blackish and ashy-grey shell-marks. Occasionally markings very scanty, sometimes (but rarely) absent. Erythristic variety once recorded. Average size of 79 eggs, 49.8×33.5 mm. *Breeding-season.*—February and first half March. *Incubation.*—Lasts 19-21 days; in confinement performed by female only (St. Quintin), though others state that male takes part. *Fledging-period.*—About 5 weeks. One brood.

FOOD.—Very varied, including carrion of all kinds, occasionally

lambs and injured or helpless mammals, or birds ; also eggs (even of birds as large as Buzzard and Cormorant), field-mice, reptiles, frogs, fish, mollusca, insects (chiefly beetles), and a little corn.

DISTRIBUTION.—*England and Wales.*—Resident. Breeds here and there on coast from Isle of Wight to Cornwall and north Devon, and in Cumbrian and Pennine Hills, and Wales. Rare visitor eastern counties and midlands (bred Essex, 1889). Breeds Isle of Man. *Scotland.*—Resident. Breeds fairly commonly, especially in west and higher districts and on islands, especially Hebrides and Shetlands; scarcer Orkneys. More widely distributed from late autumn to spring. *Ireland.*—Resident. Breeds wilder sea-cliffs and some mountains, especially in west.

MIGRATIONS.—*British Isles.*—In Scotland seems regular autumn-to spring-immigrant, sometimes in considerable numbers; in Ireland small flocks occasionally noted, but elsewhere only vagrant-movements of a bird here and there.

DISTRIBUTION.—*Abroad.*—Europe generally. Represented by allied forms in Færoes, Iceland, Spain, some Mediterranean islands, Greece, Arabia and Palestine to north-west India and Himalayas; in Canary Islands and north Africa; also in north and east Asia, Greenland, and North America.

CORVUS CORNIX

2. *Corvus cornix cornix* L.—THE HOODED CROW.

CORVUS CORNIX Linnæus, Syst. Nat., ed. x, i, p. 105 (1758—Europe. Restricted typical locality: Sweden).

Corvus cornix Linnæus, Yarrell, II, p. 275; Saunders, p. 245.

DESCRIPTION.—*Adult male and female.* *Winter.*—Back of neck, mantle, scapulars, back, rump, breast, belly, under tail-coverts, and axillaries french-grey, feathers with very fine dark mesial streaks; head, throat, wings, tail, and tibial feathers black; nasal and rectal bristles glossy-black; crown and nape glossed greenish-blue; ear-coverts and chin greenish; throat blue-purple, lower-throat mixture of black and french-grey (feathers of throat long and lance-shaped as Carrion-Crow); upper tail-coverts mixture of french-grey and blue-purple; tail, outer feathers glossed bluish-green, inner reddish-purple; bastard-wing, primary-coverts, and outer primaries glossed greenish-blue; inner primaries, secondaries, and wing-coverts reddish-purple; under wing-coverts black-brown, glossed blue-purple. This plumage is acquired by complete moult in autumn. *Summer.*—No moult. Abrasion has not much effect, but some gloss is lost and grey becomes less pure and tinged brownish.

Nestling.—(Not examined.)

Juvenile.—Whole head and throat black-brown with faint greenish gloss; tibial feathers and upper tail-coverts black-brown; back of neck, mantle, back, and rump more brownish, less bluish-grey than adult, and with small brown tips to feathers; breast, belly, and under tail-coverts like upper-parts but without brown tips; tail, wings, and wing-coverts like adult but browner and with less gloss.

First winter and summer.—Like adult but tail, wings, and wing-coverts browner and with less gloss, especially in summer, but apparently never becoming so brown as many specimens of Rooks and Carrion-Crows. The juvenile body-plumage and majority of lesser and median wing-coverts are moulted from Aug. to Oct., but not tail- and wing-feathers or rest of wing-coverts.

Measurements and structure.—♂ wing 303-332 mm., tail 170-185, tarsus 51-61, bill from nostril 31-40, depth at angle of lower mandible 16-20 (12 measured). ♀ wing as male. Wing-formula exactly as Carrion-Crow, and other structure similar.

Soft parts.—Bill, legs, and feet black; iris dark brown (adult), greyish-blue (young).

CHARACTERS AND ALLIED FORMS.—*C. c. sardonius* (Sardinia and Corsica) is smaller, *C. c. sharpii* (Siberia, Turkestan, Persia, and perhaps Egypt) is paler grey, *C. c. capellanus* (possibly distinct species, not subspecies) (Persian Gulf) is much larger, and white rather than grey. Grey of body is unmistakable specific character.

HYBRIDS.—Between *C. cornix* and *C. corone* these exhibit every intergradation of colour, and are fertile *inter se*.

FIELD-CHARACTERS.—Grey mantle and under-parts prevent any confusion with Carrion-Crow or Rook.

BREEDING-HABITS.—Breeds sometimes in tree, but often in low bush on side of steep bank, or on ledge of cliff; occasionally among heather on low islets in lochs. *Nest*.—Strongly built of sticks, heather-twigs, seaweed-stems, moss, and earth, lined wool, hair, and sometimes feathers. Saxby records large bones in foundation in Shetlands. *Eggs*.—Usually 4-6, very rarely 7; much resemble Carrion-Crow's; ground-colour varying from light blue to deep green, generally blotched and spotted over whole surface with shades of umber-brown, and underlying ashy shell-marks. Some have only few markings on blue ground; one light-coloured egg in clutch not uncommon. Erythristic variety recorded once or twice. Average size of 100 eggs, 41.2×29 mm., slightly smaller than Carrion-Crow's. *Breeding-season*.—End March and April. *Incubation*.—Shared by both sexes; lasts 18-19 days. Eggs incubated as laid. One brood.

FOOD.—Very varied, including carrion of all kinds, wounded birds, small mammals, enormous quantities of eggs of many birds

(including those of Cormorant, Shag, Puffin, Ducks, Grouse, and smaller gulls), also mollusca, insects (chiefly beetles), echini, frogs, worms, and grain.

DISTRIBUTION.—*England and Wales.*—Regular autumn- and winter-visitor east coast, south coast to Hants., Trent Valley, and east midlands; occasional further inland and western counties; rare Wales. Has bred occasionally, mostly eastern counties, and seldom inland. Has also interbred with *C. c. corone*. Resident Isle of Man. *Scotland.*—Resident. Abundant north and north-west and most islands. Overlaps breeding-range of *C. c. corone*, and often interbreeds with it, especially in Clyde and Solway areas in west, and Tay area in east. Very occasionally breeds in south-east, where chiefly known as migrant. *Ireland.*—Resident in every county.

MIGRATIONS.—*British Isles.*—Great numbers arrive east coast Great Britain from central Europe and Scandinavia, second week Oct. to first week Nov., extremes Aug. 5 and Nov. 12, and depart mid-March to third week April, extremes mid-Feb. to May 10. No evidence of migration in Ireland.

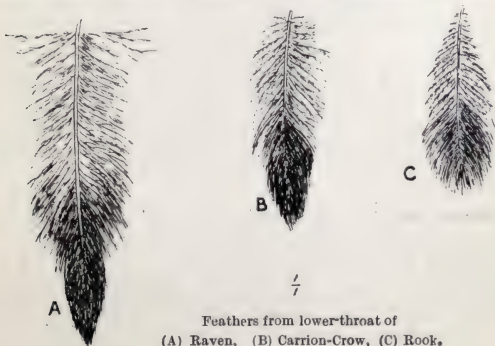
DISTRIBUTION.—*Abroad.*—Scandinavia, Denmark, Russia, east Germany, Austria, Hungary, Italy, also Færoes. Represented by other forms in Corsica and Sardinia, Balkan Peninsula, Cyprus, Egypt, and west Asia. Casual in Greenland. Interbreeds with *C. corone* where ranges overlap.

CORVUS CORONE

3. *Corvus corone corone* L.—THE CARRION-CROW.

CORVUS CORONE Linnæus, Syst. Nat., ed. x, i, p. 105 (1758—Europe. Restricted typical locality: England).

Corvus corone Linnæus, Yarrell, II, p. 274; Saunders, p. 243.



Feathers from lower-throat of
(A) Raven, (B) Carrion-Crow, (C) Rook.

DESCRIPTION.—*Adult male and female.* *Winter.*—Nasal bristles black; fore-head, crown, and nape black, glossed greenish; mantle, back, rump, and upper tail-coverts glossed reddish-purple; chin glossed green; throat, flanks, under wing-coverts, axillaries, and under tail-coverts glossed bluish-purple (feathers of throat long and lance-shaped); rest of under-parts black with little gloss; tail black underneath, glossed greenish and bluish-purple above; primaries black underneath, glossed purplish-green above; secondaries same, but glossed reddish-purple on outer webs and greenish on inner; primary-coverts and bastard-wing as primaries but more glossy; greater coverts like secondaries; median and lesser coverts glossed reddish-purple. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—No moult. Abrasion causes some loss of gloss, and wings and tail especially become browner by wear but never so brown as in first summer.

Nestling.—(Not examined.)

Juvenile.—Like that of Rook but crown and mantle duller, less glossed; outer webs of secondaries and greater coverts glossed bluer, less reddish-purple, than Rook. Wing-formula as in adult.

First winter and summer.—Like adult but wings and tail browner, especially in summer. The juvenile body-plumage, median, lesser and inner greater coverts are moulted in autumn, but not rest of wings and tail.

Measurements and structure.—♂ wing 318-345 mm., tail 175-195, tarsus 55-64, bill from nostril 34-41, depth at angle of lower mandible 17-21 (12 measured). ♀ wing 310-325. Primaries: 1st equal to or shorter than 10th, very occasionally between 9th and 10th, 2nd 5-14 mm. shorter than 6th (very occasionally equals 6th, never longer), 4th usually longest, 3rd and 5th equal or 3-7 mm. shorter, 6th 16-25 shorter; 2nd to 6th clearly emarginated outer webs. Secondaries about equal 9th primary, tips rounded. Tail rounded. Bill thick, deep, and curved at tip. Numerous rictal and nasal bristles, latter completely covering nostrils.

Soft parts.—Bill, legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*C. c. orientalis* (Siberia, north China, Japan) is larger. As compared with Rook, greenish, not reddish-purple, head and chin; bluer, not so reddish-purple, mantle, throat, and breast; feathers of throat pointed, lance-shaped instead of rounded; feather-bases whiter; bill thicker, deeper, and more curved; 2nd primary never longer than 6th, as it is in Rook.

FIELD-CHARACTERS.—Differs from Hooded Crow in its uniformly black plumage. Resembles Rook, but bill much stouter, with base feathered at all ages instead of bare as in adult Rook. In repose, plumage clings closely to body, whereas in Rook, feathers of flanks hang loosely over thighs. Generally Rooks are gregarious

and Crows in pairs, but Crows are sometimes seen in company and Rooks singly. In flight difficult to distinguish. Note, raucous croak "varrock," hardly differs from Hooded Crow's, but cannot be mistaken for any note of Rook.

BREEDING-HABITS.—Nests chiefly in trees, but in hills of Wales often in small bushes on hill-sides and on ledges of cliffs on coast; once on low stone-wall. *Nest.*—Closely resembles Hooded Crow's, sometimes very conspicuous and at times cleverly hidden; built of sticks and twigs, earth, moss, etc., lined hair and wool. *Eggs.*—Usually 4-5, rarely 6; like Hooded Crow's, but average rather paler and not so green. One egg of clutch often sparsely marked; blue, unmarked eggs rare; some very heavily marked at end. Average size of 100 eggs 43.5×30.1 mm., larger than Hooded Crow's or Rook's. *Breeding-season.*—Begins early April. *Incubation.*—Lasts 18-19 days; both sexes said to incubate, but more evidence is desirable in view of E. Selous's observations. Eggs incubated as laid. One brood. *Fledging-period.*—33-34 days (S. E. Brock).

FOOD.—Very varied, including carrion, small mammals (rabbits, mice), wounded and small birds, eggs of many birds, frogs, toads, mollusca, insects (especially beetles), worms, and grain.

DISTRIBUTION.—*England and Wales.*—Resident and common, but somewhat local. *Scotland.*—Resident. On east side common as far north as Perth, not rare in north of Moray area, and occasionally nests east Sutherland; on west side common parts of Clyde district, but scarce resident Skye and very scarce north-west Highlands; occasional visitor Orkneys, Shetlands, and Fair Isle, once Outer Hebrides (Flannans). Where overlapping range of *C. c. cornix*, frequently interbreeds. *Ireland.*—Very rare. Said to have bred Mayo, 1890.

MIGRATIONS.—*British Isles.*—Appears to arrive with Rooks east coast Great Britain from central Europe between Sept. and Nov., and to return between mid-Feb. and mid-April, but very few of such migrants appear to have been properly identified.

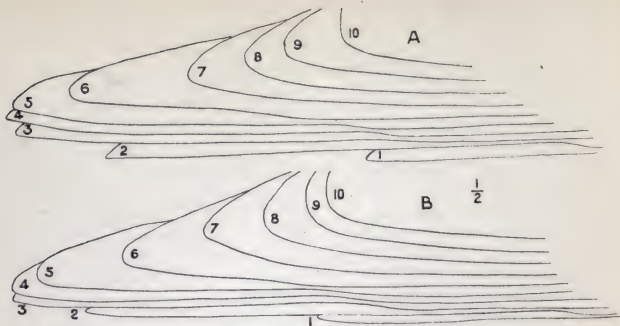
DISTRIBUTION.—*Abroad.*—Western Europe generally, in Germany roughly to the Elbe, and throughout the Alps to Bohemia. An allied form in north-east Asia. Interbreeds with *C. cornix* in Germany and Siberia where ranges overlap.

CORVUS FRUGILEGUS

4. *Corvus frugilegus frugilegus* L.—THE ROOK.

CORVUS FRUGILEGUS Linnaeus, Syst. Nat., ed. x, i, p. 105 (1758—Europe. Restricted typical locality: Sweden).

Corvus frugilegus Linnaeus, Yarrell, II, p. 289; Saunders, p. 247.

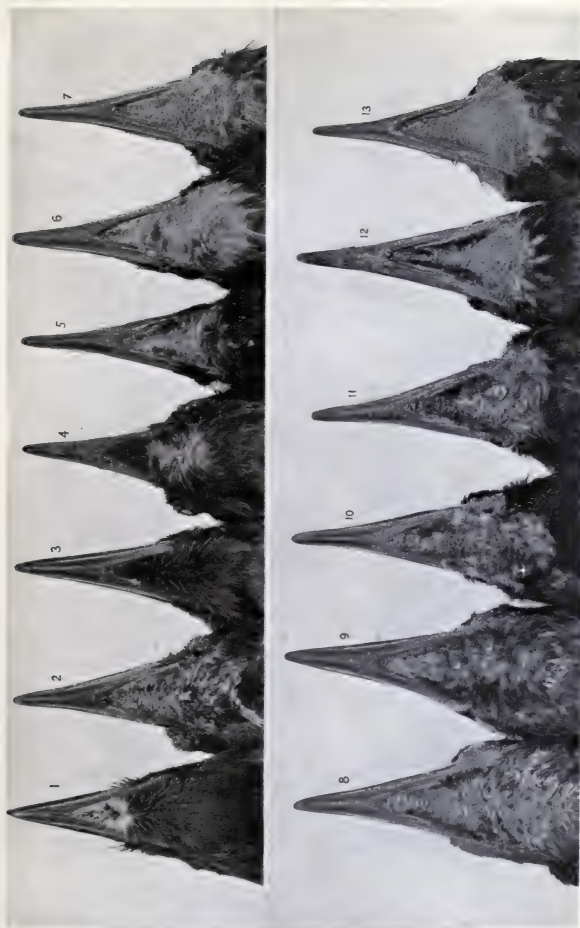


Wing-formula of A, Carrion-Crow (*C. corone*). B, Rook (*C. frugilegus*).

DESCRIPTION (Plate 1).—*Adult male and female. Winter.*—Nasal region, fore-head, lores, and under eyes bare greyish-white skin, covered with short rounded “knobs” (aborted feather sheaths); chin and upper-throat covered with dark greyish-brown down-like degenerate feathers, plumules, and filoplumes; crown, nape, and ear-coverts black, glossed greenish-purple; rest of upper-parts and under-parts black, glossed reddish-purple, but lower flanks and under tail-coverts inclined to bluish-purple, and tibial feathers greenish; vent, under wing-coverts, and axillaries sooty-black, with little gloss; tail black underneath, glossed reddish- and greenish-purple above; primaries black underneath, glossed purplish-green above, especially on outer webs and tips; secondaries same, but glossed reddish-purple on outer webs and greenish on inner; primary-coverts and bastard-wing like primaries but more glossy; greater coverts like secondaries; median and lesser coverts glossed reddish-purple. This plumage is acquired by complete moult commencing with primaries in May and finishing with head in September. *Summer.*—No moult. Down on chin gradually wears away, and very little remains by January, when skin is bare and greyish-white like fore-head. Rest of plumage becomes duller and less glossy, especially on wings and tail, but latter never become so brown as in first summer.

Nestling.—Down, dusky-grey, skin black; distribution, humeral, spinal, ulnar, and femoral. Mouth bright crimson; tongue-spots pale orange. (A. G. Leigh, *Brit. B.*, iv, p. 73.)

Juvenile.—Nasal bristles black; rest of head (fully feathered) black, slightly glossed green; hind-neck more brownish; mantle and scapulars same, slightly glossed reddish-purple; back, rump, and upper tail-coverts same, but slightly glossed greenish; whole under-parts brownish-black, very slightly glossed greenish; tail-



ROOKS' HEADS. Fig. 1. Juvenile. Fig. 2. Juvenile Moulting. Fig. 3. First Winter. Figs. 4-7, Moults of First Summer. Figs. 8-13, Adults. Fig. 8, Autumn moult. Fig. 9, Moults just complete. Figs. 10-13, To show gradual wear of "down," during winter and spring.

and wing-feathers as in adult, but underneath more brownish-black; wing-coverts as in adult but browner and with less gloss.

First winter.—Nasal bristles glossy black; rest of head (fully feathered) glossed greenish-purple, otherwise like adult, but tail and wing-feathers and greater wing-coverts considerably browner and less glossy. The juvenile body-feathers, lesser and median and two innermost greater wing-coverts are moulted in July and August, but not rest of wings and tail. *First summer*.—Nasal and gape bristles and feathers at base of lower mandible and on lores, chin, and upper-throat are gradually moulted from January to May, commencing with chin, sides of face following, and nasal region being last. Two latter regions become covered with “knobs” (aborted feather-sheaths) as in adult, but on chin and upper-throat some degenerate down-like feathers grow as well as many “knobs.” These degenerate feathers, with the plumules and filoplumes (which do not moult), form a slight covering which gradually wears down until skin is bare greyish-white as in adult. Rest of plumage does not moult, but abrasion causes loss of gloss, and wings and tail become very brown and almost without gloss.

Measurements and structure.—♂ wing 305-330 mm., tail 157-175, tarsus 52-58, bill from nostrils 35-40, depth at angle of lower mandible 15-17 (12 measured), bare skin from nostril to feathers under or just behind eye 29-37, bare skin from angle of lower mandible to feathers of throat 37-66 (22 measured in flesh). ♀ wing 290-311, bill from nostril 31-38 (10 measured). Primaries: 1st usually between 8th and 9th, more rarely between 9th and 10th, 2nd between 5th and 6th, 3rd and 4th about equal and longest, 5th 5-10 mm. shorter, 6th 35-45 shorter; 2nd to 5th clearly emarginated outer webs. Secondaries about equal 9th primary, tips rounded. Tail rounded.

Soft parts.—Bill, legs, and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*C. f. tschusii* (north Persia, Turkestan, south-west Siberia) is slightly smaller, and *C. f. pastinator* (China, Japan, east Siberia) is smaller, and adult has feathered chin but bare fore-head. For differences from Carrion-Crow, see that species.

FIELD-CHARACTERS.—Bare, greyish-white face of adult noticeable whether bird is at rest or in flight. Young, until face becomes bare, resembles Carrion-Crow, but bill always more slender and culmen less curved. At all ages baggy appearance of Rook's thighs—due to the loose flank-feathers—distinguishes it from Crow on ground. Its “caw” cannot be confused with Crow's hoarse croak.

BREEDING-HABITS.—Sociable, nesting in colonies in large trees, and quite exceptionally on buildings such as church-spires or chimneys, and in large bushes. *Nest*.—Similar to Crow's, built of sticks solidified with earth, and often on old nest of previous

year; lined grasses, moss, roots, straw, hair, wool, etc. *Eggs*.—Usually 3-5, sometimes 6, rarely 7; vary much as Crow's: ground-colour from light bluish-green to green and greyish-green but never so blue, and rarely show much of ground-colour, being more uniformly marked with shades of ashy-grey and brown. Erythristic varieties have occurred abroad, but not in British Isles. Average size of 100 eggs, 40.7×27 mm.; smaller than Crow's. *Breeding-season*.—Begins latter half of March and early April. *Incubation*.—Lasts 17-18 days; both sexes said to incubate, but generally male is seen to feed female on nest. Eggs incubated as laid. One brood. *Fledging-period*.—29-30 days (S.E. Brock).

FOOD.—In agricultural districts mainly corn; Collinge estimates vegetable matter at 71 % and Gilmour says 58 % is corn and husk; earthworms, insects, millipedes also regularly taken, and at times various fruits, acorns, walnuts, potatoes, fish, eggs of many birds, small birds, small mammals, and carrion. Proportion of animal-matter is highest in summer and lowest in winter.

DISTRIBUTION.—*British Isles*.—Resident. Generally distributed. Increasing and spreading north in Scotland, and now breeds Caithness, Sutherland, Ross, and Cromarty, O. Hebrides and Orkneys, but only visitor Shetlands. Now breeds western isles of Ireland.

MIGRATIONS.—*British Isles*.—After nesting our residents are subject to partial and irregular movements—some probably emigrating to Continent. Great numbers arrive east coast Great Britain from central Europe and Scandinavia, end Sept. to third week Nov., extremes Sept. 1 to end Nov., and depart mid-Feb. to third week April. Occasional records of emigration from south coast in late autumn and immigration in mid-March. Winter-movements also noted in Hebrides; in Ireland apparently a cross-channel movement autumn and spring.

DISTRIBUTION.—*Abroad*.—Europe generally from north Russia, Finland, and 60° north in Sweden, but rare or absent in south Europe. Casual Madeira, north Africa, Greenland, and Iceland. Represented by allied forms in parts of west and east Asia.

Genus COLÆUS Kaup.

COLÆUS Kaup, Skizz. Entw.-Gesch. und Natürl. System, p. 114 (1829—Type *C. monedula*, because German name of genus "Dohle" = Jackdaw. *C. monedula* first-named species, and accepted as type by Sharpe, 1874, and others).*

* In the same year, 1829, the name *Lycos* was given to the Jackdaws by Boie, but the name *Colæus* is preferable, because in 1787 the name *Lycus* had already been established for another genus.

Contains palæarctic Jackdaws only. Genus very similar to *Corvus*, and might without great harm be suppressed. It differs, however, by having shorter, pointed bill with almost straight culmen. First primary is rather strongly emarginated on inner web, tail at end and single rectrices almost square, very slightly rounded. Only two palæarctic species, of which *C. monedula* occurs in several races all over Europe and northern Africa as well as parts of Asia.

COLÆUS MONEDULA

5. *Colæus monedula spermologus* (Vieill.)*—THE JACKDAW.

CORVUS SPERMOLOGUS Vieillot, Nouv. Dict. d'Hist. Nat., VIII, p. 40 (1817—Typical locality: south of France).

Corvus monedula Linnæus, Yarrell, II, p. 305; Saunders, p. 239.



Jackdaw (*Colæus m. spermologus*).

DESCRIPTION.—*Adult male and female. Winter.*—Nasal and rectal bristles glossy black; fore-head and crown glossy blue-black; nape, back and sides of neck, and ear-coverts silvery ash-grey; mantle, back and rump black slightly glossed blue and tinged greyish (feathers being narrowly tipped grey); scapulars and upper tail-coverts with more purple gloss; chin, throat, under wing-coverts, and axillaries black, slightly glossed blue; rest of under-parts black, tinged greyish; tail black, outer feathers glossed bluish-green on outer webs, inner bluer; bastard-wing, primaries, and primary-coverts glossed bluish-green; secondaries and all wing-coverts glossed reddish-purple. This plumage is acquired by complete moult in early autumn, beginning with wing-feathers in June. *Summer.*—No moult. Abrasion has little effect, but by wear of tips of feathers grey of neck becomes less pronounced and mantle and under-parts rather darker.

* The Scandinavian Jackdaw, *Colæus monedula monedula* (L.), may possibly be an immigrant to the east coast of Great Britain in autumn, but none of the specimens of migrants which we have so far examined have been of this form.

Nestling.—Down, buffish-grey; distribution, humeral, spinal, femoral and ulnar; mouth, inside deep orange, no spots (A. G. Leigh, *Brit. B.*, III, p. 154.)

Juvenile.—Crown brownish-black, slightly glossy; nape and sides of neck greyish-brown; ear-coverts with silvery tinge; mantle, back, and rump black-brown; under-parts paler brown with slight greyish tinge; tail and wings as in adult but rather less glossy, lesser and median coverts brown-black with scarcely any gloss.

First winter and summer.—Like adult, but tail and wing-feathers, greater wing-coverts, and often some median and lesser coverts browner and less glossy, becoming in summer often quite brown and almost devoid of gloss. The juvenile body-plumage and majority (often all) lesser and median and usually innermost greater coverts are moulted in autumn, but not rest of coverts and wing- and tail-feathers.

Measurements and structure.—♂ wing 228-246 mm., tail 124-140, tarsus 42-47, bill from nostril 23-26 (12 measured). ♀ wing 225-243. Primaries: 1st equal to or shorter than 10th or between 9th and 10th, 3rd and 4th usually equal and longest, 2nd and 5th 12-20 mm. shorter, 6th 30-40 shorter; 2nd to 5th emarginated outer webs. Secondaries between 9th and 10th primaries, square tipped, slightly notched. Tail nearly square, very slightly rounded. Numerous rictal and nasal bristles, latter completely covering nostrils.

CHARACTERS AND ALLIED FORMS.—*C. m. monedula* (Scandinavia) has slightly greyer under-parts and small white or creamy-white patch at base of side of neck, *C. m. collaris* (eastern Europe, western Asia) is very like typical form, but sides of neck are paler and white patch is rather larger, *C. m. cirtensis* (Algeria) is as grey on under-parts as *C. m. monedula*, but has no white patch on sides of neck. The European forms intergrade and series must be compared. Silvery-grey sides of neck and nape unmistakable specific character.

FIELD-CHARACTERS.—Smaller size, dapper appearance, and a certain pert alertness in actions, distinguish Jackdaw at all ages from more sedate Rook and Crows. Silver-grey nape and ear-coverts of old bird afford additional distinction. In flight differs from Rook, with which it frequently consorts, by quicker wing-beats and its notes, "cae" and "jack"; alarm-note uttered at nest is "caw."

BREEDING-HABITS.—Usually breeds in hole, whether of tree, building, rock, or rabbit-burrow, but sometimes builds large open nest of sticks with deep cup, occasionally roofed, in trees. Shows tendency to sociability, several pairs often breeding close together. *Nest*.—Varies according to site, enormous quantities of sticks used in some cases, but absent from small holes, which are merely

lined with wool, hair, fur, grass, etc. *Eggs*.—4-6, sometimes 7; much bluer than eggs of most *Corvidæ*; ground being pale greenish-blue, spotted brownish-black and ashy; some with bold black blotches, others unmarked or only finely pitted. Average of 50 eggs, 35.47×25.32 mm. *Breeding-season*.—Begins second half April. *Incubation*.—Lasts 18-20 days. *Fledging-period*.—4-5 weeks. One brood.

Food.—Occasionally young birds and frequently eggs, but mainly insects (coleoptera and larvæ, larvæ of moths, diptera, etc.); also slugs, worms, wheat, young potatoes, etc., and sometimes fruit (cherries and walnuts).

DISTRIBUTION.—*British Isles*.—Resident. Common except north-west Scotland, where scarce, O. Hebrides, where appears on migration and has recently nested, and Shetlands, where only rather rare visitor, although now abundant Orkneys. Does not breed western isles of Ireland.

MIGRATIONS.—*British Isles*.—Some of our residents appear to depart autumn and return spring. Numbers arrive east coast Great Britain mid-Oct. to first week Nov., extremes Sept. 18 to Nov. 20, and depart mid-Feb. to third week April. Some evidence of arrivals on south coast (Hants.) beginning of April. Arrivals have been noted April and Oct. Fair Isle.

DISTRIBUTION.—*Abroad*.—West and central Europe, also parts of south Europe, but exact limits not yet ascertained. Replaced by closely allied forms in Scandinavia, east Europe, parts of north and west Asia, and Algeria.

Genus PICA Briss.

PICA Brisson, Orn. I, p. 30 (1760—Type by tautonymy "*pica*," i.e. *Pica pica*; cf. *op. c.*, II, p. 35).

Differs at a glance from all other north European *Corvidæ* by long graduated tail, middle feathers of which stand out far beyond rest. First primary very narrow, stiff, and short. Colours white and black, latter mostly beautifully glossed with metallic green, blue, or purple. Sexes alike. Genus ranges over Europe, north Africa, western, northern, central and eastern Asia, and parts of North America. Eight forms distinguishable, replacing each other geographically. All might be treated as subspecies.

PICA PICA

6. *Pica pica pica* (L.)—THE MAGPIE.

CORVUS PICA Linnæus, Syst. Nat., ed. x, i, p. 106 (1758—Europe. Restricted typical locality: Sweden).

Pica rustica (Scopoli), Yarrell, II, p. 312; Saunders, p. 237.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole head, neck, mantle, inner scapulars, upper tail-coverts, throat, upper-breast, tibial feathers, vent, under tail-coverts, axillaries, and under wing-coverts velvety-black with blue-purple tinge; crown and scapulars slightly glossed greenish; chin and throat-feathers with whitish shaft-lines; rump varying from white or brownish-white to brown (in British specimens never very white and often nearly black); rest of scapulars and breast, flanks, and belly, pure white; tail below black, above both webs of central pair and outer webs of rest brilliant bronze-green with band of red-purple near tip, merging into blue-purple and green-purple at tip; primaries: outer webs and tips glossed blue-green, inner webs mostly white except at base and tip; in outer primaries white goes to a point near shaft, in inner ones it is squarer at tip and extends less towards base (extent of white in primaries varies slightly individually); secondaries: outer webs glossed bright blue with inner line of bronze-green on basal half of outer feathers, tips bluish-green, inner webs black except those of innermost feathers which are bluish-green; primary-coverts, greater and median coverts, bronze bluish-green; lesser wing-coverts black with little gloss. This plumage is acquired by complete moult in autumn. *Summer.*—No moult. Abrasion causes slight loss of gloss and brilliancy.

Nestling —Down, absent.

Juvenile.—Like adult, but with all black parts sooty blackish-brown; rump blackish-brown; scapulars brownish or buffish-white; belly buffish-white; wing-coverts much less brilliantly glossed; wing and tail-feathers like adult but slightly less brilliant.

First winter and summer.—Scarcely distinguishable from adults but slightly less brilliant wings and tail, especially noticeable on central tail-feathers, primary-coverts, and primaries, which become brownish in summer. The juvenile body-plumage and wing-coverts are moulted in Aug.-Sept. but not tail, wing-feathers, or primary-coverts.

Measurements and structure.—♂ wing 187-200, tail 215-260, tarsus 47-53, bill from nostril 24-29 (12 measured). ♀ wing 173-190, tail 205-240. Primaries: 1st about twice primary-coverts, scythe-shaped, 2nd usually between 9th and 10th, sometimes either shorter than 10th or longer than 9th, 4th to 6th about equal and longest, 3rd and 7th 7-12 mm. shorter; 3rd to 7th clearly emarginated outer webs. Secondaries about equal 10th primary, tips almost square. Tail wedge-shaped, central pair 20-40 mm. longer than next and rest graduated in steps of about 20 mm. Strong rictal bristles and numerous nasal bristles completely covering nostrils. Bill slightly hooked at tip.

Soft parts.—Bill, legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*P. p. melanota* (Spain and Portugal) has uniform black rump, occasionally with pale patch,

P. p. mauritanica (north-west Africa) has black rump and blue naked patch behind eye, *P. p. bactriana* (northern Asia) is larger, has white rump and usually more white on primaries, *P. p. sericea* (China, S. Japan) is very dark, *P. p. bottanensis* (Tibet, Himalayas) is very large. Long tail and black and white coloration unmistakable specific distinctions.

FIELD-CHARACTERS.—Pied plumage and long wedge-shaped tail separate it at once from all other British birds. In thick cover presence often revealed by unmistakable chattering cry.

BREEDING-HABITS.—Usually breeds in tall trees, sometimes in thorny bushes or straggling hedgerows, and in Scandinavia occasionally under eaves of houses and on telephone-poles. *Nest.*—Bulky, built of sticks with lining of earth and over it a layer of fine roots. Rarely hair reported used in lining. Dome of sticks, nearly always thorny, covers nest, but an opening is left. *Eggs.*—Usually 5 or 6 to 8, rarely 9 or 10; vary in ground-colour from greenish-blue to yellowish- and greyish-green, closely spotted and mottled brown and ash. Varieties almost unmarked or with heavy brown caps, and erythristic eggs have been recorded. Average of 100 eggs, 32.9×23 mm. *Breeding-season.*—Begins April; exceptionally, late March. *Incubation.*—Lasts 17 18 days; performed by female alone (*Ann. Scot. Nat. Hist.*, 1896), though it has been stated that both sexes take part. *Fledging-period.*—26 30 days. One brood.

FOOD.—Mainly insects, but also carrion, small mammals (rats, mice, voles), young birds of many species and eggs, insects (beetles and their larvæ, larvæ of lepidoptera), worms, and vegetable matter (grain, acorns, holly-berries, etc.).

DISTRIBUTION.—*England and Wales.*—Resident. Generally distributed, but much diminished in numbers in some parts by game-preserving and probably now exterminated East Anglia. Some evidence of migration on east and south-east coasts England. *Scotland.*—Resident. Very scarce north and north-west, and rather local elsewhere on mainland, being in some places plentiful and in others very scarce. Unknown O. Hebrides and very rare vagrant Orkneys and Shetlands. *Ireland.*—Resident since 17th century. Numerous; scarcer in extreme west.

DISTRIBUTION.—*Abroad.*—Nearly whole of Europe. Replaced by other forms in Spain and north-west Africa, and in parts of Asia and North America.

Genus NUCIFRAGA Briss.

NUCIFRAGA Brisson, Orn., I, p. 30 (1760)—Type by tautonymy "*nucifraga*," i.e. *N. caryocatactes*; cf. *op. c.*, II, p. 59).

Bill about as long as head, somewhat rounded laterally, almost

quite straight, with a more or less sharp or obtuse tip. Nostrils circular, entirely hidden by bristles. 4th to 6th primaries almost equal and longest, 3rd very little shorter, 1st not much more than half 2nd. Tail about three-quarters length of wing, end very little rounded, almost straight. Plumage soft and full, blackish-brown with white spots. Sexes alike. One species in a number of different forms in northern Europe and Asia, in India to Himalayas, east as far as China and Japan, and as far south as Hainan and Formosa. Another very different species in North America.

NUCIFRAGA CARYOCATACTES

7. *Nucifraga caryocatactes caryocatactes* (L.).—THE THICK-BILLED NUTCRACKER.

CORVUS CARYOCATACTES, Linnaeus, Syst. Nat. ed. x, i, p. 106 (1758—Europe. Restricted typical locality : Sweden).

Nucifraga caryocatactes (Linnaeus), Yarrell, II, p. 330 (part) ; Saunders, p. 233 (part).

DESCRIPTION.—*Adult male and female.* *Winter.*—Lores and nasal bristles white with brown bases ; fore-head and crown uniform dark chocolate-brown ; rest of body-plumage rather paler chocolate-brown with pear-shaped white spots at tip of each feather, considerably larger on under-parts, ear-coverts, and sides of neck than on upper-parts ; back with few and still smaller spots ; rump darker with scarcely any spots ; upper tail-coverts brownish-black slightly glossed greenish with one or two small whitish mesial streaks ; under tail-coverts pure white ; tail brownish-black, glossed bluish-green above and with white tips, small on central, and becoming much larger on outer pairs ; primaries and secondaries brown-black glossed bluish-green above with very small white tips to inner primaries and outer secondaries, 6th and 7th primaries with a large crescentic white mark on basal part of inner web, 5th primary often also with a small similar mark* ; primary-coverts, bastard-wing, and greater coverts glossed bluish-green with some of the outer feathers with small white tips ; median coverts same but more and larger white tips ; lesser coverts browner with little gloss and pear-shaped white tips. This plumage is acquired by complete moult from June to September. *Summer.*—No moult. Abrasion makes body-plumage rather paler, wings and tail become browner, white tips of primaries, secondaries, outer primary-coverts, and greater coverts mostly wear off.

Nestling.—(Not examined.)

Juvenile.—Resembling adult but body-plumage paler brown ; crown not so uniform, with pale shaft-streaks ; mantle with white

* One specimen of *N. c. macrorhynchus* has 5th to 8th primaries so marked and small mark on 9th.

spots smaller and much less conspicuous; back uniform brown; rump and upper tail-coverts with narrow whitish fringes; underparts with white tips not so pear-shaped and less sharply defined; throat usually whitish with little brown showing; tail- and wing-feathers and wing-coverts browner and less glossed; primary, greater and median wing-coverts all with white tips; 6th and 7th primaries sometimes without white mark on inner webs.

First winter. Male and female.—Like adults but primaries, secondaries, and wing-coverts browner and less glossed, and primary, greater, and median wing-coverts all with white tips; 6th and 7th primaries sometimes without white mark on inner web. The juvenile body-plumage, lesser and median coverts are moulted July and August, but not tail- and wing-feathers and primary- and greater coverts. *Summer.*—Tail, wings, and wing-coverts become very brown, and white spots mostly wear off greater coverts.

Measurements and structure.—♂ wing 173-194, tail 115-136, tarsus 40-45, bill from nostril 34-40, depth at angle 14-16 (13 measured). ♀ wing 175-190, bill depth at angle 13-15. Primaries: 1st about twice primary-coverts, 5th longest, 4th and 6th often equal but generally 1-3 mm. shorter, 3rd 5-12 shorter, 2nd between 7th and 9th; 3rd to 6th clearly emarginated outer webs. Secondaries between 9th and 10th or shorter, tips rounded. Tail slightly rounded laterally. Rictal and nasal bristles, latter covering nostrils but not so long as in *Corvus*.

Soft parts.—Bill, legs and feet black; iris brown.

CHARACTERS AND ALLIED FORMS.—Chocolate-brown plumage, spotted white, is unmistakable specific distinction. For difference of *N. c. macrorhynchus* see p. 27; other forms in Japan, Turkestan, Kamtschatka and India differ in size of white spots of body-plumage and white tips of tail or wings, or in darker coloration.

FIELD-CHARACTERS.—Shape not unlike Rook, with long bill; plumage mottled; white tips of widely spread tail-feathers very noticeable in flight. Flight dipping; stronger than Jay. Note, monosyllabic "gurrrr" or "kurrrr" repeated five to eight times, but Saunders says it has another note like a sprung rattle (F.C.R.J.).

BREEDING-HABITS.—*Nest.*—Always in coniferous forest, generally near trunk at about 15 or 18 ft. from ground. Built of twigs, moss, and lichens, solidified with earth, lined thick layer of grass and hairy lichen (*Usnea barbata*). *Eggs.*—Usually 3, sometimes 4, and occasionally only 2; ground-colour pale bluish-green, with fine olive-brown and grey spots. (Some finely-speckled varieties of Jackdaw's eggs approach them closely, but usually have darker markings.) Average of 100 eggs 33.9 × 25 mm. *Breeding-season.*—Begins about second week March in central Europe, and April

in north. *Incubation*.—Said to last 18 days; apparently chiefly performed by hen. One brood.

FOOD.—Mainly seeds of conifers, especially *Pinus cembra* where found, but also hazel-nuts, juniper-berries, and insects (coleoptera, orthoptera, odonata, etc.), flesh, and young birds.

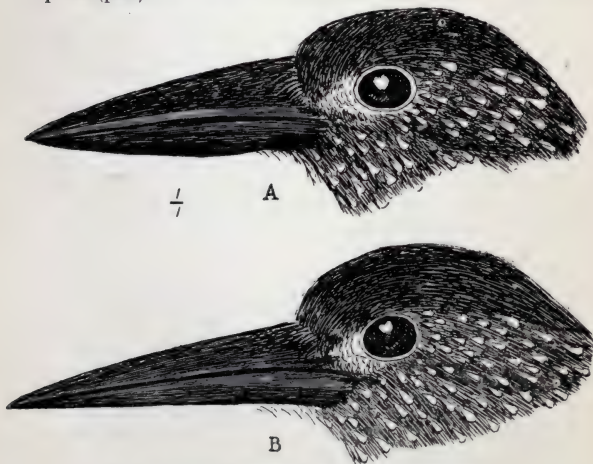
DISTRIBUTION. — *England*. — Rare vagrant. Some occurrences recorded under *N. c. macrorhynchus* may have been of this form, but only the following have been satisfactorily identified: *Sussex*—one near Chichester, Dec. 21, 1900, male near Brede, Feb. 12, 1907, one Penhurst, Nov. 7, 1908, female near Hastings, March 4, 1909; *Kent*—male, Benenden, Jan. 14, 1905; *Cheshire*—male near Northwich, 1860.

DISTRIBUTION. — *Abroad*. — Scandinavia, Bornholm, Denmark, northern Russia, East Prussia, and principal mountain-systems of Europe (Harz, Böhmerwald, Alps, Carpathians, Tatra, Balkans, etc.)

8. *Nucifraga caryocatactes macrorhynchus* Brehm — THE SLENDER-BILLED NUTCRACKER.

NUCIFRAGA MACRORHYNCHOS Brehm, *Lehrb. Naturg. eur. Vögel*, 1, p. 103 (1823—Mountain forests mid. N. Europe and Asia, occasionally Germany. Type, a migrant shot in winter in Germany).

Nucifraga caryocatactes (Linnaeus), *Yarrell*, II, p. 330 (part); *Saunders*, p. 233 (part).



A. Thick-billed Nutcracker (*Nucifraga c. caryocatactes*).
B. Slender-billed Nutcracker (*Nucifraga c. macrorhynchus*).

DESCRIPTION.—Like *N. c. caryocatactes*, but with a comparatively finer (less deep and less broad) and usually longer and more sharply-pointed bill. Bill from nostril: ♂ 38·5-46, ♀ 37-41; depth at angle, ♂ and ♀, 12-14.

BREEDING-HABITS.—Builds in pine-forests early in year, but little known of breeding-habits, which probably scarcely differ from those of Thick-billed form. *Eggs.*—Said to be similar.

FOOD.—British-killed specimens have been found feeding on coleoptera (dung-beetles, etc.) and grain, but in Siberia main food is seed of *Pinus cembra sibirica*.

DISTRIBUTION. — *Great Britain.* — Vagrant. About forty-five authentic records of Nutcrackers in England, chiefly in southern and eastern counties, one Wales, three Scotland, but none Ireland. Probably most were of the Slender-billed form, but few have been properly identified (*cf. supra*). Six in autumn 1911, two in Dec. 1912, and two in Oct. 1913, were of this form.

DISTRIBUTION.—*Abroad.*—Breeding in Siberia; in winter frequently all over Europe as far westward as France and central Pyrenees. Common in certain years, rare or absent in others. Represented by allied forms in Japan, Formosa, north China, Kamtschatka, Turkestan, Himalayas, etc.

Genus GARRULUS Briss.

GARRULUS Brisson, Orn., I, p. 30 (1760—Type "*Garrulus*," i.e. *Garrulus glandarius*, by tautonymy, *cf. op. c.*, II, p. 47).

At once recognizable by striking coloration of bastard-wing, primary-coverts, and outer greater wing-coverts, which are bright blue, barred with black. Plumage full and soft, feathers of crown elongated, forming erectile crest. Nostrils roundish, covered by bristles. 5th and 6th primaries longest, 1st about half as long as longest. Tail almost square. Sexes alike.

Five or six species, only European one, *G. glandarius*, in at least sixteen different subspecies; Europe, north-west Africa, Asia to Himalayas and south China, Japan and Formosa.

GARRULUS GLANDARIUS

9. *Garrulus glandarius glandarius* (L.)—THE CONTINENTAL JAY.

CORVUS GLANDARIUS Linnæus, Syst. Nat., ed. x, i, p. 106 (1758—Europe. Restricted typical locality: Sweden).

Garrulus glandarius (Linnæus), Yarrell, II, p. 323 (part); Saunders, p. 235 (part).

Garrulus g. glandarius, N. F. Ticehurst, Brit. B., IV, p. 213.

DESCRIPTION.—Like British Jay, but greyer, not so pink, lower-mantle, scapulars, and back; rather paler breast and flanks; streaking of crown very variable, even more so than in *rufitergum*. Comparison of skins necessary for certain identification. Indistinguishable in the field.

Measurements.—♂ wing 178-187 mm., tail 140-152, tarsus 39-44, bill from skull 28-39 (12 measured). ♀ wing 174-195. Averaging perhaps a little larger than British Jay.

BREEDING-HABITS.—*Nest.*—In hazel-saplings, conifers, or deciduous trees at from 5-20 ft. (occasionally much higher) from ground in woods. Built of sticks and twigs and a little earth, thick internal layer of fine black roots, not unlike Bullfinch's but of course much larger. *Eggs.*—5-7 but 8 to 10 recorded; ground-colour sage-green or olive-buff, finely mottled slightly darker olive spots, and generally black hair-line at big end. Varieties with green ground and few markings also occur. Average of 100 eggs, 31.6×23 mm. *Breeding-season.*—Begins late April or early May. *Incubation.*—Lasts 16-17 days (Naumann), 14 (Dettmers). One brood, but second layings may be found till late June.

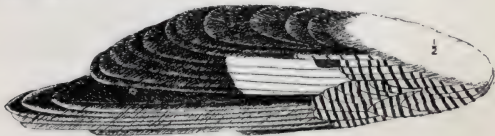
FOOD.—Young birds of many species, eggs, mice, small frogs, insects and their larvæ, worms, green peas; and in autumn, acorns, nuts, beech-mast, grain, and potatoes.

DISTRIBUTION.—*Great Britain.*—Migrant. Jays arriving on east coast England in autumn have fairly often been recorded (cf. Saunders, p. 235; *Birds Yorks.*, I, pp. 226-7; *Hist. Birds Kent*, p. 196, etc.), but no specimens of immigrants had been examined until recorded by N. F. Ticehurst, Kent and Sussex, Sept. and Oct., 1910 (*Brit. B.*, iv, p. 213). More records of Continental Jays based on examination of specimens are required.

DISTRIBUTION.—*Abroad.*—Europe generally, but represented by different forms in Spain, some Mediterranean islands, south-east Russia, Turkey, north-west Africa, and parts of Asia.

10. *Garrulus glandarius rufitergum* Hart.—THE BRITISH JAY.

GARRULUS GLANDARIUS RUFITERGUM Hartert, Vög. pal. Fauna, I, p. 30 (1903—"Grossbritannien und Irland." Typical locality, Tring. Irish specimens not examined at the time); *id.*, *Brit. B.*, I, p. 209. *Garrulus glandarius* (Linnæus), Yarrell, II, p. 323 (part); Saunders, p. 235 (part).



British Jay (*Garrulus g. rufitergum*).

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head and crown whitish, streaked black (amount and width of streaks vary individually; feathers of crown very narrow and crest-like); nape brownish-pink, finely-streaked black and usually with faint narrow cross-bars and often tinged blue; back of neck and mantle brownish-pink; back and scapulars same but tinged grey; rump and upper tail-coverts white; sides of neck, breast, flanks, axillaries, and under wing-coverts brownish-pink; ear-coverts same but generally whitish near eye; broad black moustachial stripe; chin, throat, centre of belly, and under tail-coverts white; tail brown-black with base grey, barred blue-grey; primaries brown-black with outer webs fringed greyish-white and inner webs mottled bluish at base; secondaries black with basal half of outer webs of first five white marked blue and black, and base of 6th barred blue, white, and black, innermost deep chestnut, tipped black; bastard-wing, primary-coverts, and outer greater coverts blue, barred black and narrowly barred white, rest of greater coverts black; median coverts chestnut with narrow greyish bars; lesser coverts brownish-pink. This plumage is acquired by complete moult in early autumn. *Summer.*—No moult. Abrasion makes mantle browner and less pink, and under-parts more buff and less pink.

Nestling.—Down, absent. Mouth, inside pink; no spots (C. B. Ticehurst, *Brit. B.*, iv, p. 72).

Juvenile.—Like adult but with smaller dark streaks on fore-head and crown, and more foxy-red, not so pink, on upper-parts, and reddish-buff, not pink, on breast and flanks.

First winter and summer.—Like adult. The juvenile body-feathers and lesser wing-coverts are moulted in autumn but not remiges, rectrices, primary- and greater coverts.

Measurements and structure.—♂ wing 173-185 mm., tail 134-147, tarsus 40-44, bill from skull 29-35 (12 measured). ♀ wing 170-188. Primaries: 1st about two-thirds 2nd, 2nd equal to or 1-12 mm. shorter than 10th, 5th and 6th nearly equal and longest, 4th and 7th 2-8 mm. shorter, 3rd 10-16 shorter; 4th to 7th slightly emarginated outer webs. Secondaries about 10 mm. shorter than 10th primary. Tail almost square, slightly rounded laterally. Bill short and thickish, slightly hooked at tip. Nostrils covered with bristle-like feathers; a few longish rictal bristles.

Soft parts.—Bill blackish-horn; legs and feet pale brown; iris whitish-blue (adult), brown (juvenile).

CHARACTERS AND ALLIED FORMS.—For differences of Continental and Irish Jays see under those forms. There are many other nearly allied forms which differ in measurements and shades of colour, while others such as *G. g. atricapillus* (Syria and south-west Persia), *G. g. cervicalis* (north Algeria and north Tunisia) have black crowns. Blue wing and white rump are specific characters.

FIELD-CHARACTERS.—Vinaceous body-colour, white and black

crest, and bright blue in wing-coverts identify it at once at close quarters. Weak flight and rounded wings characteristic at distance in open; in close woods pure white rump usually very noticeable, as is harsh scream, "schach."

BREEDING-HABITS.—*Nest.*—In woods and plantations, generally in undergrowth and not as a rule high, though exceptionally 60 ft. from ground; outcrop from trunk of big tree also a favourite site; exceptionally in tall ling, close to ground. *Eggs.*—Generally 5 or 6, less often 7; resemble those of other races, and cannot be distinguished with certainty. Rare variety almost pink with pale brownish spots, and another almost unmarked with bluish-green ground. Average of 100 eggs, 31.7×22.8 mm. *Breeding-season.*—Begins about last week April in south and early May in north England. *Incubation.*—Lasts probably about sixteen days. One brood.

FOOD.—Much as Continental Jay, but slugs, snails, and occasionally fruit (apples, plums, and cherries) recorded in addition.

DISTRIBUTION.—Confined to Great Britain.—*England and Wales.*—Resident. Generally distributed; locally abundant. Not found Isle of Man. *Scotland.*—Resident. Very local. Decreased in numbers but apparently extending northwards. Very rare north of Great Glen and not found Sutherland, Caithness, north-west Highlands, Hebrides, or Orkneys. Recorded Shetlands, but this may have been the Continental form. *Ireland.*—Replaced by *Garrulus glandarius hibernicus*, but may occur casually.

II. *Garrulus glandarius hibernicus* With. & Hart.—THE IRISH JAY.

GARRULUS GLANDARIUS HIBERNICUS Witherby and Hartert, Brit. B., iv, p. 234 (1911—Ireland. Type, co. Wexford).

DESCRIPTION.—Like British Jay but sides of head, ear-coverts, breast, and flanks darker and more rufous; nape, mantle, and scapulars also darker and richer rufous-pink; fore-head and crown usually darker with broader black streaks; back of crown and nape usually considerably more tinged blue.

Measurements.—About same as in British Jay. ♂ wing 170-187, tail 140-152, tarsus 40-44, bill from skull 28-32 (12 measured). ♀ wing 172-184.

BREEDING-HABITS.—Resemble those of British Jay, except that clutch is usually smaller, consisting of 4, or less commonly 5, eggs. Average size of 4 eggs (May 11th, co. Waterford) 31.7×23.5 mm.

DISTRIBUTION.—Confined to Ireland.—Resident in parts of following counties: Waterford, Tipperary, Kilkenny, Wexford, Carlow, Queen's, King's, Kildare, Galway, and irregularly in Cork, Westmeath, Wicklow, Dublin, Meath, and Louth; recently spread into Fermanagh and Cavan.

Genus PYRRHOCORAX Tunst.*

PYRRHOCORAX Tunstall, Orn. Brit., p. 2 (1771—Monotype, the Chough).

Contains Chough and Alpine Chough. Former has longer, red, and more curved, latter shorter and whitish, bill. In both, plumage is entirely black. Sexes alike in colour, but bill of female smaller. Tarsus covered with an unbroken lamina in front and behind ("booted"); only quite young birds show traces of a division into several scutes. Unnecessary to split the two species into two genera, and we follow Dresser, Reichenow, and many others, who unite them in one genus.

PYRRHOCORAX PYRRHOCORAX

12. *Pyrrhocorax pyrrhocorax* (L.)—THE CHOUGH.

UPUPA PYRRHOCORAX Linnaeus, Syst. Nat., ed. x, i, p. 118 (1758—Coasts of England and Egypt. Restricted typical locality: England).

Pyrrhocorax graculus† (Linnaeus) Yarrell, II, p. 252; Saunders, p. 231.



Chough (*Pyrrhocorax pyrrhocorax*).

* The oldest generic term is *Coracia* Brisson, Orn. I, p. 30, type, according to tautonymy, *op. c.*, II, p. 3, the Chough. The name has generally been rejected because it is so much like *Coracias*. This is no reason, however, for its rejection, but it may be argued that it is a faulty transliteration of *Coracias*, a name which is preoccupied, in another sense, by Linnaeus. As a synonym should be quoted *Cornix* Forster, Syn. Cat. Brit. B., p. 5, 1817. Forster mentions under the genus *Cornix* "*C. rufipes*," the Chough and *C. monedula*, the Jackdaw. No action having hitherto been taken with regard to the name *Cornix*, I designate as its type *C. pyrrhocorax* (*rufipes* Forst.), to avoid this name being taken up for the Jackdaw.—E.H.

† It is difficult to understand how this name came to be accepted for the red-billed Chough, as the diagnosis says: "rostro pedibusque luteis." On the other hand, the *Upupa Pyrrhocorax* of 1758 is undoubtedly the Chough, the diagnosis being: "Upupa atra, rostro pedibusque rubris"; in 1766, however, Linnaeus, apparently having forgotten what he had already written quite correctly—except for the genus—in 1758, gave under the name of *Corvus Pyrrhocorax* a mixture.—E.H.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole body-plumage glossy blue-black; feather-bases greyish-brown; longer upper and under tail-coverts, tail, primaries, secondaries, bastard-wing, primary-coverts, and greater coverts glossed greenish. This plumage is acquired by complete moult in August-September, primaries starting in June. *Summer.*—No moult and only a slight loss of gloss on wings and tail by abrasion.

Nestling.—(Not examined.)

Juvenile.—Like adult, but body-feathers brownish-black with their tips only slightly glossed blue-black; feather-bases browner than adult; tail, wings, and wing-coverts tinged brown and slightly duller than adult.

First winter and summer.—Difficult to distinguish from adult, but tail and wings less glossy, becoming brown in summer; especially noticeable on bastard-wing, primary-coverts, and inner secondaries. The juvenile body-plumage and lesser and median wing-coverts are moulted in August-September but not rest of wings nor tail.

Measurements and structure.—♂ wing 270-310 mm., tail 140-160, tarsus 55-59, bill from nostril 49-58 (12 measured). ♀ wing 265-285 mm., bill from nostril 42-47. Primaries: 1st usually between 9th and 10th, sometimes either longer than 9th or shorter than 10th, 3rd to 5th usually about equal and longest, 2nd 20-40 mm. shorter, 6th 12-25 shorter; 2nd to 6th emarginated outer webs. Secondaries about equal 10th primary, tips fairly square and slightly notched. Tail nearly square. Bill curved, upper mandible slightly longer than lower. Bristle-like feathers covering nostrils are shorter and more compact than in *Corvus*.

Soft parts.—Bill, legs, and feet bright red (adult), orange (young); iris dark brown.

CHARACTERS AND ALLIED FORMS.—No subspecies. *P. graculus* is smaller in all dimensions, and has finer, much shorter and less curved yellow bill.

FIELD-CHARACTERS.—Only likely to be confused with Jackdaw from which distinguished by absence of grey in its purple-black plumage, more slender form, and red bill and legs. Flight buoyant; widely-separated primaries, with tips often curving upward, give wing a pectinated appearance. Notes, a soft "k'chufe," and a rather querulous "tchare." Alarm note, "keeawe," changing to loud, hard "kwarr," when nest or young in danger.

BREEDING-HABITS.—Nearly all breeding-places in British Islands at present on, or close to, sea-coast, but formerly many in cliffs and rocks inland. Crevices and holes in roofs of sea-caves or crannies and hollows in face of steep cliffs are usual sites. Occasionally unused or ruined buildings are utilized. *Nest.*—Bulky, built of sticks, heather-stalks, or furze-stems, dead plants, etc., thickly-lined wool, cow or goat hair, etc. *Eggs.*—3 or 4 to 6 or 7;

whitish, creamy-yellow or very pale greenish ground-colour, thickly-mottled and spotted sepia and yellowish-brown markings and underlying ashy blotches. Some boldly blotched and occasionally with black hair-line at big end. Average of 100 eggs, 39.4×27.9 mm. *Breeding-season*.—Begins late April (exceptionally April 10th) or early May in Ireland, and about three weeks earlier in Spain. *Incubation*.—Lasts 17-18 days (W.-Bond), 18-20 days (Girtanner). *Fledging-period*.—About 30 days. One brood.

FOOD.—Chiefly insects (coleoptera, chiefly dung-beetles and their larvæ; larvæ of moths, etc), worms, and at times corn. Crustacea, mollusca, arachnida, as well as lizards and even small rodents also recorded, but confirmation of last seems desirable.

DISTRIBUTION.—*Great Britain*.—Resident. Rapidly decreasing. Breeds on parts of south-west coast of England; some sea-cliffs and a few places close to sea and in at least one locality inland in Wales; Isle of Man; some I. Hebrides (especially Islay and Jura), and one or two places on mainland in south-west Scotland. Occurs sporadically elsewhere. *Ireland*.—Resident on many sea-cliffs, especially in west, and some inland cliffs, but decreasing. Absent from east coast.

DISTRIBUTION.—*Abroad*.—Channel Islands, coasts of west France, Alps, Spain, some Canary Islands, north Africa, Mediterranean countries, Asia Minor, Syria, and mountains of central and north Asia eastwards to China, southwards to Himalayas.

[NOTE.—An example of the ALPINE CHOUGH, *Pyrrhocorax graculus* (L.) nec auct., shot in Oxon. in 1881, had probably escaped from captivity (cf. Saunders, p. 232).]

FAMILY STURNIDÆ.

Primaries ten, but first very short, though distinctly visible. Without rictal bristles, nostrils free from feathers. Tongue flat, not tubular. Tarsus behind with unbroken lamina. First plumage different from that of adult in colour and sometimes in structure. Nests in holes. Old World.

Key to genera of family STURNIDÆ.

- | | | | |
|---|---|--|----------------------------|
| 1 | { | Head crested, back and abdomen rose-colour . . . | <i>Pastor</i> ad., p. 37 |
| | | Head not crested, back and abdomen not rose-colour | 2 |
| 2 | { | Back and abdomen glossy green-, purple-, or blue-black | <i>Sturnus</i> ad., p. 34 |
| | | Back and abdomen dark brown | <i>Sturnus</i> juv., p. 35 |
| | | Back greyish earth-brown, abdomen buff . . . | <i>Pastor</i> juv., p. 38 |

Genus STURNUS L.

STURNUS Linnaeus, Syst. Nat., ed. x, i, p. 167 (1758—Type by tautonymy—acc. to Opinion 16 Comm. Nomencl.—*Sturnus vulgaris*. Also by subsequent designation, Stephens 1817).

Bill flat, wide, straight, not very much pointed, about as long as head. Nostrils reached by feathers of fore-head, but not covered by them, protected by a membrane. Wings long and pointed, first primary clearly visible, though very small, pointed and stiff, about 10-20 mm. long. Tail short, straight, about half as long as wing. Sexes alike, but young very different from adult, in which feathers of head, neck, and chest are narrow, pointed, and elongated, and plumage very glossy.

All forms might be looked upon as subspecies of *S. vulgaris*, though *S. unicolor* is generally treated as a different species. *S. vulgaris* with about fifteen different subspecies. Europe, north Africa, and greater part of Asiatic continent.

STURNUS VULGARIS

13. *Sturnus vulgaris vulgaris* L.—THE STARLING.

STURNUS VULGARIS Linnaeus, Syst. Nat., ed. x, i, p. 167 (1758—Europe, Africa. Restricted typical locality: S. Sweden).

Sturnus vulgaris (Linnaeus), Yarrell, II, p. 228; Saunders, p. 227.

DESCRIPTION.—*Adult male. Winter.*—Whole plumage blackish with metallic reflexions: feathers of upper-parts tipped buff, and those of under-parts white. Crown and nape green (sometimes tinged purple); mantle reddish-purple; scapulars, back, rump, and upper tail-coverts green and purple; ear-coverts, cheeks, chin, and throat green, merging to reddish-purple on upper-breast and sides of neck; breast bronze-green; belly black and bronze-green; flanks blue-purple; vent and under tail-coverts black slightly glossed green and broadly margined grey or pale buff; axillaries and under wing-coverts brown, margined and tipped pale buff; tail-feathers and primaries black-brown, edged and tipped buff with very slight green gloss inside buff on outer webs; secondaries same but with wider and more brilliant edging of blue-green gloss; primary-coverts like primaries; greater coverts like secondaries but with more gloss; median and lesser coverts blue-green, tipped buff. Body-feathers especially on throat and breast long, tapering and pointed. This plumage is acquired by complete moult beginning sometimes in June. *Summer.*—No moult. Buff and grey tips of feathers gradually wear off, making whole bird darker and more glossy, especially on crown and under-parts.

Adult female.—Like male, but body-feathers shorter and rather broader, not so sharply pointed; buff and grey tips being thus larger, make female more spotted both in winter and summer

than adult male. Metallic colours not so brilliant, and in secondaries and greater coverts much less in extent.

Nestling.—Down, greyish-white, a shade darker on head, fairly long and plentiful; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, and ventral. Mouth, inside orange, no spots; flanges broad and lemon-yellow (C. B. Ticehurst, *Brit. B.*, II, p. 194).

Juvenile. Male and female.—All upper-parts dark mouse-brown; chin and centre of throat whitish, flecked brown; breast and flanks brown; belly brown, streaked greyish-white; axillaries pale brown; under and upper tail-coverts brown, with slight edgings and tips of buff; tail-feathers dark brown narrowly margined buff; primaries same; secondaries, primary-coverts, and greater coverts with broader buff edgings. N.B.—Juvenile specimens from Shetland appear to be very dark.

First winter. Male and female.—Like adults but body-feathers broader and less pointed, and buff and white tips larger and rounder, giving very spotted appearance in winter (when freshly-moulted chin appears uniform white and fore-head buff). The juvenile plumage is completely (including wings and tail) moulted in July-Sept. *First summer.*—Spots wear off considerably, but not so much as in adults, and metallic colours are less brilliant and secondaries and greater coverts have less gloss than in adults.

Measurements and structure.—♂ wing 125-132, tail 64-68, tarsus 28-30, bill from nostril 17-20, bill width at nostril 7-8 (12 measured). ♀ wing 122-127. Primaries: 1st small and pointed, 7-11 mm. longer than under wing-coverts, 2nd and 3rd about equal and longest, rest becoming shorter in steps of 4-10 mm.; 2nd and 3rd emarginated outer webs. Secondaries about equal 10th primary. Tail fairly square, slightly rounded laterally.

Soft parts.—Bill in winter brown with base of under mandible dull yellow, in summer (beginning change January) lemon-yellow; legs and feet reddish-brown; iris, male dark brown, female same but with narrow yellowish-white outer ring, young grey-brown.



Feathers from lower-throat of ♂ adult (right-hand) and ♂ first winter (left-hand) Starlings.

CHARACTERS AND ALLIED FORMS.—*S. v. faroensis* (Færoes) is larger and darker (especially in juvenile-plumage), *S. v. granti* (Azores) has very small first primary, *S. v. poltaratskyi* (Siberia, southwards in winter) has purple head and throat and green mantle, *S. v. purpurascens* (Asia Minor to north-west India) has green head and throat, purple mantle and breast, and very dark axillaries, *S. v. græcus* and *S. v. balcanicus* (south-east Europe) are much like last; many other forms differing in distribution of metallic colours and in size.

FIELD-CHARACTERS.—Its bustling activity on ground, spindle-like contour of body on wing, direct purposeful flight, rapid beats of short triangular wings alternating with gliding motions, loquacity, sociability, and aerial evolutions of flocks at dusk, are all characteristic.

BREEDING-HABITS.—Generally breeds in hole—most frequently in tree or building, but also in nest-boxes, ivy on walls, among rocks and heaps of stones, and occasionally in foundations of larger birds' nests, in holes in ground, haystacks, etc. *Nest.*—Untidy, built of straw, lined feathers and sometimes containing leaves, wool, or moss. *Eggs.*—5-7 sometimes 8; very pale blue or sometimes almost white, and with some gloss. Average size of 50 eggs, 30.2×21.3 mm. *Breeding-season.*—About mid-April, but occasionally has second brood, in some districts not uncommonly. Exceptionally breeds also in late autumn and even winter. *Incubation.*—Lasts 12-13 days (S. E. Brock), 14 days (Liebe); shared by both sexes. *Fledging-period.*—21-22 days (S.E.B.).

FOOD.—Mainly insects and their larvæ, many species of coleoptera (chiefly dung-beetles, weevils, or wireworms), lepidoptera (larvæ of noctuæ and other moths), orthoptera (earwigs), diptera (larvæ of tipula, etc.). Also earth-worms, spiders, centipedes, woodlice, and mollusca (slugs and snails), sometimes wheat, eggs, and in some districts much fruit in summer and autumn.

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed. Increased greatly during last fifty years or so, and has spread northwards on Scottish mainland (has long been common Shetlands and Orkneys) and westwards on mainland Great Britain and Ireland and in I. Hebrides, though has long been common (but lately greatly increased) in O. Hebrides and some western isles of Ireland. In Ireland now nests every county, but still scarce some districts, especially in parts of Cork and Kerry.

MIGRATIONS.—*British Isles.*—Our residents flock late summer and some emigrate autumn and return Feb. and March. Vast numbers arrive from central and north Europe on east coast Great Britain end Sept. to first week Nov., extremes second week Sept. to third week Nov.; some winter and some pass south and return mid-Feb. to early April. A great immigration in Ireland from Sept. to Nov. Winter weather-movements also occur.

DISTRIBUTION.—*Abroad.*—From north Scandinavia and Russia to south Europe, the Pyrenees and Italy; casual in Spitsbergen, and either this or the Færoe bird in Greenland and Iceland; on migration to Madeira and Canary Islands, wintering in Mediterranean region. Other more or less close-allied forms on Færoes, Azores, in south-east Europe, and in Asia.

Genus PASTOR Temm.

PASTOR Temminck, Man. d'Orn., I, p. 82 (1815—Type (monotype) *P. roseus*).

This monotypic genus differs strikingly from *Sturnus* in the adult, which has in both sexes a wide crest and much rose-colour, also stronger feet; the young bird differs from the adult in its short crest and lighter coloration. One annual moult. Distribution, that of the single species.

PASTOR ROSEUS

4. *Pastor roseus* (L.)—THE ROSE-COLOURED STARLING.

TURDUS ROSEUS Linnæus, Syst. Nat., ed. x, i, p. 170 (1758—Lapland and Switzerland).

Pastor roseus (Linnæus), Yarrell, II, p. 243; Saunders, p. 229.



Rose-coloured Starling (*Pastor roseus*): ♂ adult.

DESCRIPTION.—*Adult male. Winter.*—Whole head and extending over upper-mantle and upper-breast black, glossed reddish-purple and tipped pale brown (feathers of crown and nape long and narrow, forming crest); mantle, back, rump, breast, flanks, and belly pale rosy-pink, somewhat obscured on under-parts and much so on upper-parts by long pale brown tips of feathers; inner scapulars partially black-brown, making narrow dark line on each side mantle; thighs, under and upper tail-coverts black, glossed blue-purple and tipped buffish-grey; axillaries and under wing-coverts brown-black, fringed and tipped white; tail black, glossed blue-purple and green; primaries and secondaries, outer webs and tips black glossed blue-purple and green, inner webs brown; primary, greater, and median coverts glossed blue-purple and green, median with whitish tips; lesser coverts blacker with longer pinkish-buff tips. This plumage is acquired by complete

moult in autumn. *Summer*.—No moult. Abrasion causes considerable alteration. Brown tips gradually wear off pink feathers and by May-June upper- and under-parts are pure rosy-pink, tips wear off feathers of head, median wing-coverts, and upper tail-coverts, and become much reduced on under tail-coverts and lesser wing-coverts.

Adult female. Winter.—Like male but crest shorter, pink duller more obscured by brown, gloss on head duller and much more obscured by buff tips; wing-feathers and coverts and tail much less glossy and narrowly edged. *Summer*.—Abrasion has same effect as in male, but pink generally not so pure; head, wings, and tail much duller, browner, and less glossed.

Nestling.—(Not examined.)

Juvenile.—Upper-parts uniform brown; chin, centre of throat, lower-breast, and belly brownish-white; lower-throat, sides of throat, and upper-breast spotted and streaked brown (occasionally dark brown); flanks pale brown; under tail-coverts and axillaries brown with brownish-white edges and tips; tail, wing-feathers, and wing-coverts dark brown with brownish-white edges and tips. Feathers of nape very slightly elongated.

First winter. Male.—Closely resembling adult female; pink very much obscured; buff edgings to wings and tail conspicuous, and gloss much duller than adult male. The juvenile plumage is completely (including wings and tail) moulted in autumn. *Summer*.—Does not become so pure a pink on upper-parts as adult, and traces of edgings can generally be found on secondaries and greater coverts. *Female*.—Still browner and duller than adult female, often with scarcely any pink on feathers of upper-parts; crest very short; axillaries pale brown, fringed whitish; under-parts much washed brown.

Measurements and structure.—♂ wing 125-133 mm., tail 62-68, tarsus 29-32, bill from nostrils 14-16, width at nostrils 6-7 (12 measured). ♀ wing 124-133. Primaries: 1st small and narrow about two-thirds primary-coverts, 2nd and 3rd about equal and longest, 4th 3-7 mm. shorter, 5th 10-16 shorter; 3rd and 4th slightly emarginated outer webs. Secondaries about equal 10th primary, tips square and slightly notched. Tail almost square.

Soft parts.—Bill pink with basal half of lower mandible black; legs and feet pink; iris brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies. Pink colouring and crest are distinctive.

FIELD-CHARACTERS.—Resembles Starling in flight and habits, but, except at distance, contrast of colour is good distinguishing character. Gregarious, and single birds will associate with Starlings. Note, harsh chatter, less musical than Starling's, but somewhat similar (F.C.R.J.).

BREEDING-HABITS.—Breeds in colonies in most erratic way, thousands of pairs appropriating suitable locality, breeding, and deserting it again. Rocky ground covered with broken stones, or ruins, preferred, but in default any kind of hole in old stone-wall or in ground. *Nest.*—Untidy heap of twigs, straw, grasses etc., lined roots, feathers, or any available material; not infrequently hardly any nest. *Eggs.*—3 to 8, most commonly 5 or 6, rarely even 9; very pale bluish or bluish-white, with no markings; more glossy and paler than Starling's. Average of 80 eggs, 28.7×21 mm. *Breeding-season.*—Variable, sometimes not till mid-June, at others early in May: probably dependent on food-supply. *Incubation.*—Period not known, probably under 14 days. One brood.

FOOD.—Orthoptera (locusts, grasshoppers, etc.); also coleoptera and many other insects, and much fruit (mulberries, cherries, figs, etc.). British killed specimens fed chiefly on beetles, gnats, worms, and fruit (mulberries, elderberries, currants, and gooseberries).

DISTRIBUTION.—*British Isles.*—Vagrant. Fairly frequent. Recorded from many parts England, chiefly east side, but often Devon and Cornwall; seldom Wales; often Scotland, but never O. Hebrides; about twenty-eight times Ireland.

DISTRIBUTION.—*Abroad.*—South-east Europe, occasionally as far west as Italy and Hungary, and in Asia from Asia Minor to Turkestan; common in winter in India. Wandering irregularly far northwards, thus observed from time to time in nearly all parts of Europe, exceptionally as far north as Lapland, Finland, east Prussia, also Belgium and Holland.

[NOTE.—Examples of the RED-WINGED STARLING, *Agelaius phœniceus* Linnæus, of North America have been taken in this country, but the recorded examples had probably escaped from captivity. The same may be said of *Icterus galbula* (*Coracias Galbula* Linnæus, *Syst. Nat.*, ed. x, i, p. 108, typ. loc., Carolina), also from America, which has been captured in Shetland, and recorded under the name *Icterus baltimore*. *Sturnella magna* and *Scolecophagus carolinus* (sub nomine *S. ferrugineus*) from North America must surely have escaped from captivity, and this is absolutely certain with the Indian Mynah, *Gracula religiosa*, from southern India and Ceylon.]

FAMILY ORIOLIDÆ.

Medium-sized birds, the majority of species with much yellow in plumage. First primary well developed; in Genus *Oriolus* about half as long as second, third longest. Tail-feathers twelve, primaries ten. Bill about as long as head, nostrils free of feathers, upper portion covered with a membrane. Rictal bristles present, but fine and short. Tarsus short. Sexes different; young striped below. Habits strictly arboreal. Numerous species in tropical Africa and Asia to Australia; only one in Europe.

Genus **ORIOIUS** L.

ORIOIUS Linnæus, Syst. Nat., ed. xii, i, p. 160 (1766—Type by tautonymy (*Coracias oriolus* 1758 = *Oriolus galbula*).

In the genus *Oriolus* the lores are feathered. For characters see under family. Only one species in Europe, many in Africa, others in India and East-Indian Archipelago to Australia.

ORIOIUS ORIOIUS15. *Oriolus oriolus oriolus* (L.)—THE GOLDEN ORIOLE.

CORACIAS ORIOIUS Linnæus, Syst. Nat., ed. x, i, p. 107 (1758—Europe, Asia. Restricted typical locality: Sweden).

Oriolus galbula Linnæus, Yarrell, i, p. 233; Saunders, p. 145.

DESCRIPTION.—*Adult male. Winter.*—Lores black; rest of body-plumage bright golden-yellow, generally with few (occasionally good many) feathers of mantle and scapulars and few under wing-coverts and upper tail-coverts slightly marked black; tail velvety-black tinged yellow at base, central pair narrowly tipped yellow, rest with distal half or third yellow; primaries velvety-black, tipped yellowish-white, inner webs fringed grey and outer webs of 3rd to 5th fringed whitish on distal half; secondaries velvety-black with broader yellowish-white tips; primary-coverts velvety-black with broad pale yellow tips forming distinct yellow patch; greater, median, and lesser coverts velvety-black, innermost partially yellow. This plumage is acquired by complete moult in autumn. *Summer.*—No moult and no noticeable change by abrasion.

Adult female. Winter and summer.—Crown, ear-coverts, sides of neck, mantle, scapulars, and back golden-green; rump and upper tail-coverts greenish-yellow; lores greyish-black; throat and upper-breast ashy-grey, faintly streaked dark brown; lower-breast and belly yellowish-white, more boldly streaked; flanks greenish-yellow lightly streaked; under tail-coverts, axillaries, and under wing-coverts bright yellow; tail as in male but browner, strongly tinged yellow and with smaller yellow tips; primaries and secondaries brown, edged and tipped greyish-white, and inner secondaries tinged green; primary-coverts black-brown, tipped pale yellow; greater and median coverts brown, tinged green; lesser rather darker brown and more distinctly tipped green. N.B.—Occasionally females are yellow on under-parts lightly streaked brownish-green, and with crown and rump bright greenish-yellow.

Nestling.—(Not examined.)

Juvenile.—Much as adult female but feathers of crown, mantle, back, and wing-coverts with pale yellow tips, under-parts with browner and less distinct streaks, under tail-coverts paler yellow.

First winter and summer. Male.—Upper-parts as in adult female but rather more yellow; throat ashy-grey, tinged yellow; upper-breast yellowish-green, faintly streaked brown; lower-breast, belly, and flanks yellow, faintly streaked on flanks and sides brown; tail browner-black than in adult male and with rather smaller yellow tips; wings more like adult female but rather darker and with less green tinge, and wing-coverts with pale tips. The juvenile body-plumage is moulted in autumn but apparently not wing- and tail-feathers and wing-coverts. N.B.—Some males like adults but more greenish on upper-parts and with light greenish streaks on under-parts and less glossy-black wings and tail may be second-winter birds. They are like the very bright females noted above.

First winter and summer. Female.—Like adult female but upper-parts more olive-, less golden-, green; ear-coverts brownish; breast and belly less yellowish and more strongly streaked black-brown; wing-coverts distinctly tipped greenish-yellow.

Measurements and structure.—♂ wing 150-161 mm., tail 77-85, tarsus 21-24, bill from feathers 22-26 (12 measured). ♀ wing 146-157. Primaries: 1st about double primary-coverts and about half (or less) 2nd, 3rd longest, 2nd 8-12mm. shorter, 4th 1-6 shorter, 5th 14-23 shorter; 3rd and 4th clearly emarginated outer webs. Longest secondary equals 10th primary. Tail almost square, slightly rounded laterally. Bill wide at base, tapering to point; slightly hooked. A few rectal bristles.

Soft parts.—Bill dark pink (young ♀ browner); legs and feet dark slate; iris dark crimson (young ♀ dark brown).

CHARACTERS AND ALLIED FORMS.—In *O. o. kundoo* (India, Turkestan) male has patch of black behind eyes, primary-coverts and tail-feathers (except central pair) mostly yellow with only bases black; female has more yellow under-parts, more yellow on primary-coverts and tail, and greener secondaries and wing-coverts.

FIELD-CHARACTERS.—Frequently uttered, loud, and very melodious whistle ("wiel-a-wo") of male generally first indication of presence; curious harsh growling noises to be heard at close quarters. Makes short flight, when disturbed, to nearest tree, in which it disappears. Male very skulking, and practically invisible in tree just coming into leaf, but during flight bold black and golden-yellow plumage very conspicuous. Females and young males look greenish, and are hard to see (F.C.R.J.)

BREEDING-HABITS.—Breeds by preference in parks, old wooded gardens and small plantations, building its remarkable nest in angle of two horizontal boughs at various heights from ground.

Nest.—Slung like a hammock, but attached firmly to boughs on both sides, built of grass stalks, sedges, strips of bark, wool, etc., lined flowery grass-heads and frequently containing bits of paper

woven into it. *Eggs*.—Usually 4, sometimes 5, very rarely 6; white or creamy ground-colour, with few bold purplish-black spots, each with slight penumbra, and mostly near big end. Average of 100 eggs, 30.8×21.3 mm. *Breeding-season*.—Generally late May or early June in central Europe, rarely as early as mid-May, but earlier in Spain. *Incubation*.—Lasts about 14-15 days; male relieves female in middle of day (Naumann). One brood.

Food.—Insects in spring, but much fruit in autumn. Coleoptera (especially cockchafers) and larvæ of lepidoptera, diptera, orthoptera (grasshoppers), and hemiptera: also spiders and small mollusca, cherries and mulberries, also currants, grapes, and figs.

DISTRIBUTION.—*England and Wales*.—Spring-visitor (arriving end April to mid-May). Annual in very small numbers to south-east and south-west England; irregular elsewhere, but has occurred most counties. Has nested Norfolk, Suffolk, Essex, Northants., Herts., Surrey, Devon, and especially Kent, while other records are not authenticated. *Scotland*.—A few occurrences, mostly in south; one Shetlands, one Orkneys, and noted Fair Isle spring and autumn 1908, and May 1909, and spring 1913. *Ireland*.—Rare casual spring and summer-visitor, most frequent Kerry, Cork, Waterford, and Down.

DISTRIBUTION. — *Abroad*. — Europe generally, except Norway, Sweden north of 63° , and Russia north of 60° , to Mediterranean, and in north-west Africa; eastward to Tian-Shan and Altai, and replaced by allied form in India and Turkestan. In winter in tropical and southern Africa and Madagascar.

FAMILY FRINGILLIDÆ.

Comprising all finch-like or “seed-eating” birds of our country. Bill conical, short, and more or less stout, but very variable; cutting-edges either smooth or strongly toothed or angulated. Nostrils always nearer to culmen than to cutting-edge of bill and close to frontal feathers, sometimes concealed or partially so. Wing with nine obvious primaries, first spurious, concealed and displaced by next. Tail with twelve rectrices. Tarsus scutellated in front, sides covered with unbroken plates forming sharp ridge at back. Sexes different, young mostly like female. Complete moult in autumn, and in certain species also a partial spring-moult; autumn-plumage often greatly changed towards spring by wearing away of differently coloured edges to feathers. Cosmopolitan, or nearly so.

Key to genera of family FRINGILLIDÆ.

- 1 { Tips of mandibles crossing, bill laterally compressed
 { Tips of mandibles not crossing, bill not compressed 2

Loxia, p. 83

- 2 { Bill enormous, width at base over 10 mm. . . . *Coccothraustes*, p. 44
 { Bill less large, width at base under 10 mm. . . . 3
- 3 { Cutting-edges of mandibles straight and coterminous, mandibular angle at chin very slightly indicated 4
 { Cutting-edges of mandibles incurved, often leaving visible gap in outlines of closed bill; mandibular angle at chin acute 12
- 4 { Culmen curved, bill short and stout 5
 { Culmen nearly or quite straight, bill more elongated and pointed 8
- 5 { Larger, wing over 100 mm.; bill more than half as long as head *Pinicola*, p. 81
 { Smaller, wing under 100 mm.; bill not more than half length of head 6
- 6 { Very small, wing under 80 mm.; yellow in plumage of adult *Serinus*, p. 71
 { Larger, wing about 80 mm., or more; no yellow in plumage of adult 7
- 7 { First visible primary longest *Carpodacus*, p. 78
 { First visible primary shorter than second *Pyrrhula*, p. 74
- 8 { Bill very stout; green in plumage *Chloris*, p. 47
 { Bill not so stout; no green in plumage 9
- 9 { Gonys (lower outline of under mandible) straight 10
 { Gonys convex *Passer*, p. 100
- 10 { Larger, wing over 100 mm.; lateral tail-feathers almost entirely white *Montifringilla*, p. 98
 { Smaller, wing under 100 mm.; lateral tail-feathers only partially, if at all, white 11
- 11 { Tail over 60 mm. *Fringilla*, p. 91
 { Tail under 60 mm. *Carduelis*, p. 50
- 12 { Wings very long, 4th (3rd visible) primary much shorter than 2nd; longest primaries exceeding shorter secondaries by twice length of tarsus, falling short of tail by not more than length of tarsus: *Plectrophenax*, p. 140
 { Wings not so long, 4th primary little, if at all, shorter than 2nd; longest primaries exceeding shortest secondaries by less than twice length of tarsus, falling short of tail by much more than length of tarsus 13
- 13 { Hind claw curved, shorter than hind toe *Emberiza*, p. 106
 { Hind claw slightly arched or nearly straight, nearly equal to or longer than hind toe *Calcaricus*, p. 136

Genus COCCOTHAUSTES Briss.

COCCOTHAUSTES Brisson, Orn., I, p. 36 (1760—Type by tautonymy : *Coccothraustes*, cf. Brisson, Orn., III, p. 218).

At once recognizable by enormous bill, which is about as wide as high at base, and not much longer. Tail short and square, only slightly emarginated in middle ; about half as long as wing. 1st primary hidden, 2nd about as long as 3rd and 4th which are longest, 5th a little shorter, following ones cut square at tips and emarginated on inner webs. Feet short and strong ; tarsus about as long as middle toe. Sexes differ little. Young different ; under-parts spotted crossways. One species in four forms in Europe, north-west Africa, north Asia.

COCCOTHAUSTES COCCOTHAUSTES

16. *Coccothraustes coccothraustes coccothraustes* (L.)—THE HAWFINCH.

LOXIA COCCOTHAUSTES Linnaeus, Syst. Nat., ed. x, i, p. 171 (1758—"Habitat in Europa australiori." Restricted typical locality : Italy). *Coccothraustes vulgaris* Pallas, Yarrell, II, p. 98 ; Saunders, p. 171.



Hawfinch (*Coccothraustes c. coccothraustes*) ;
bill and part of 6th (curled) primary.



DESCRIPTION.—*Adult male. Winter.*—Narrow line on fore-head, lores, chin, and centre of throat black ; fore-part of crown, ear-coverts, cheeks, and rump yellowish-brown ; rest of crown, nape, and upper tail-coverts deeper rufous-brown ; hind-neck pinkish-grey ; mantle and scapulars rich umber ; breast and flanks pinkish-brown, darker on flanks ; centre of belly greyish-white ; vent, under tail-coverts, and axillaries white ; tail : centre pair base black, distal part grey and rufous-brown, tipped white, other tail-feathers with black basal, white distal, halves, outer webs black fringed rufous ; primaries : jet-black, tipped glossy-green and purple with middle portion of feathers white on inner webs ; secondaries same but with less white, and outer webs fringed glossy-purple, inner secondaries brown ; primary-coverts black, glossy on outer webs ; greater coverts with brownish-white outer and black inner

webs, inner greater coverts rufous-brown; median coverts white with black bases; lesser coverts black-brown. This plumage is acquired by complete moult in August and September. *Summer*.—No moult and scarcely any change by abrasion, but forepart of crown becomes rather paler.

Adult female. Winter and summer.—Like male but paler and less rufous; black of fore-head and lores much reduced; crown, rump, upper tail-coverts especially paler and more greyish-brown; sides of head and under-parts also considerably paler and more greyish; tail not so white at tip; primaries with distal half of outer webs grey-brown; secondaries with outer webs fringed grey instead of glossy purple.

Nestling.—Down, white, long, and plentiful; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside violet-pink, no tongue-spots; externally, flanges yellowish-orange and whitish at angles (C. B. Ticehurst, *Brit. B.*, II, p. 192).

Juvenile (Plate 2). Male.—Very narrow line of black round base of bill; head and nape greenish-brown; hind-neck greyer; mantle sepia; rump buff; upper tail-coverts brown; whole upper-parts faintly mottled black; chin and throat pale buffish-yellow; rest of under-parts pale buff, breast mottled brown, flanks and sides barred brown-black, centre of belly, vent, and under tail-coverts pale buff; axillaries white; tail and wing-feathers as adult; greater and median coverts rather paler and more buffish than adult. *Female*.—Like male but with no black round bill and whiter (less buff) under-parts, and primaries and secondaries fringed grey-brown and grey as in adult female.

First winter and summer. Male and female.—Like adults but primary-coverts apparently not so glossy. The juvenile body-feathers and wing-coverts are moulted in August but not primary-coverts, remiges or rectrices.

Measurements and structure.—♂ wing 100-106 mm., tail 47-53, tarsus 18-20, bill from feathers 18-20 (14 measured). ♀ wing 97-106. Primaries: 1st minute and hidden, 3rd and 4th usually equal and longest, 2nd usually 1-2 mm. shorter, 5th 2-5 shorter, 6th 13-16 shorter; 3rd to 5th emarginated outer webs; 6th to 9th notched and curled at tip. Secondaries about equal 10th primary, square at tip and slightly notched. Tail almost square; upper tail-coverts within 10 mm. of tip of tail, under coverts slightly shorter. Bill extremely deep and broad. Oblong horny pad on palate and two "bosses" below in lower jaw (W. P. Pycraft, *Brit. B.*, I, p. 152). Small rictal and nasal bristles.

Soft parts.—Bill lead-blue, blackish at tip and yellowish under lower mandible (summer), yellowish-horn with dark brown tip (winter and juvenile) legs and feet brownish-flesh; iris greyish-white.

CHARACTERS AND ALLIED FORMS.—*C. c. japonicus* (east Siberia, Japan, China) and *C. c. buvryi* (north-west Africa) are paler or duller and have less white on primaries, *C. c. humii* (Turkestan, India) has yellowish under-parts. Enormous bill distinguishes species.

FIELD-CHARACTERS.—Enormous bill and stout head, short tail and white wing-patch, are outstanding features, whether bird at rest or in flight. Usual note an explosive “psitt,” shrill rather than loud, but quite characteristic. Shy and retiring, its presence is often only revealed by shredded pea-pods, or split stones of cherries, holly, whitethorn, and yew (and in last case terminal twigs) beneath trees in which it has fed.

BREEDING-HABITS.—Breeds chiefly in orchards and old wooded gardens or woods, often building on horizontal branches of fruit-trees, occasionally in forest-trees or thorn-bushes at varying heights. *Nest.*—Layer of small twigs as foundation, generally projecting on each side of branch; nest itself slight and shallow, built of roots, lichens, bents, etc., and lined fine roots, hair, or fibre. *Eggs.*—4-6, generally 5; ground-colour light bluish or greyish-green, sometimes pale slate or warm buff, boldly but sparsely spotted and streaked blackish-brown with faint grey underlying streaks. Average of 100 eggs, 23.8×17.2 mm. *Breeding-season.*—Begins end April in south England, but about fortnight later in north. *Incubation.*—Lasts 14 days; chiefly performed by female (Naumann). One brood.

FOOD.—Kernels and seeds of many kinds (e.g. sloe, bird-cherry, cherry, plum, bullace, yew, hawthorn, hornbeam, and laurel); also green peas and beech-mast. Larvæ of currant-moth are eaten in June, and Naumann says young are fed on insects.

DISTRIBUTION.—*England.*—Resident. Local, but generally distributed except in north and west, where, however, has lately increased and spread, and now breeds in Cumberland, Durham, and Northumberland (since 1884). Rarely breeds in Devon, and not in Cornwall. *Wales.*—Resident. Now well-known in eastern half, but rare or unknown in western parts. *Scotland.*—Resident. Now considered as widely distributed and not very rare in south-east, and has nested East Lothian (1908 and 1909), West Lothian (1911), and east Fife (1903); also bred Dumfries (1906 and 1908). Elsewhere a good many stragglers, even as far north as Fair Isle and Shetlands. *Ireland.*—Rare vagrant to all quarters, mostly winter. Said to have nested Kildare 1902.

MIGRATIONS.—*British Isles.*—No regular migrations yet worked out, but occurs occasionally at lighthouses in England, Scotland (even to extreme north of mainland), and Ireland, and has been noticed in winter in parts where it does not breed.

DISTRIBUTION.—*Abroad.*—Europe generally to islands in Mediterranean, exact limits eastwards uncertain. Replaced by allied forms in north-west Africa, Turkestan, India, and east Asia.

Genus CHLORIS Cuv.

CHLORIS Cuvier, *Leçons d'Anat. Comp. Tab.*, II, Ois. (1800—Latin name for "Le Verdier," which, from Cuvier's other writings, we know to be the Greenfinch, and which is type of genus).

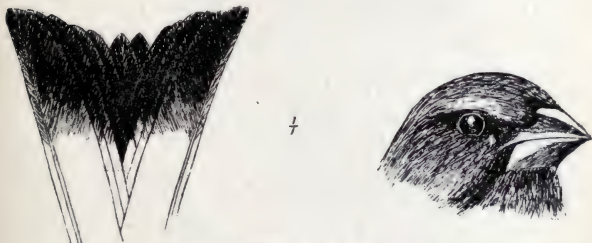
Bill short and conical, about as high as wide at base and only 2-3 mm. longer. Culmen and cutting-edges straight, tip of beak pointed. Wings long, first three obvious primaries about equal and longest. Tail moderate, distinctly emarginated. Europe, north-west Africa, northern Asia, China, and Japan south to Bonin Islands.

CHLORIS CHLORIS

17. *Chloris chloris chloris* (L.)—THE GREENFINCH.

LOXIA CHLORIS Linnæus, *Syst. Nat.*, ed. x, i, p. 174 (1758—Europe. Restricted typical locality: Sweden).

Coccothraustes chloris (Linnæus), Yarrell, II, p. 105. *Ligurinus chloris* (Linnæus), Saunders, p. 169.



Greenfinch (*Chloris c. chloris*) ♂ adult.

DESCRIPTION.—*Adult male. Winter.*—Crown, nape, mantle, and back dark greyish-brown, tinged greenish; lower-back and rump yellowish-green; upper tail-coverts dark grey, tinged green; lores blackish-brown; indistinct brown malar stripe; ear-coverts, sides of neck and flanks brownish-grey, tinged green; chin, throat, and breast yellowish-green, tinged grey; belly, axillaries, and under wing-coverts bright greenish-yellow; vent greyish-white; under tail-coverts pale yellow and grey; tail-feathers brown-black, fringed grey on distal half and greenish-yellow on proximal, four outer pairs with about proximal half of feathers greenish-yellow; primaries brown-black, tipped grey and fringed on outer webs

greenish-yellow; secondaries same but fringed brownish-grey on distal and greenish on proximal halves; primary-coverts like primaries but with greenish fringes; greater coverts grey-brown, tinged green, especially on outer webs; median and lesser coverts brownish-green. This plumage is acquired by complete moult in early autumn, sometimes beginning as early as May and June. *Summer*.—No moult. By abrasion of tips of feathers upper-parts gradually become greener, under-parts brighter yellowish-green, and greater wing-coverts and inner secondaries greyer and less brown.

Adult female. Winter.—Crown, nape, and mantle dark greyish-brown with indistinct darker streaks; rump yellowish-green; upper tail-coverts brown; eye-stripe greenish; lores, distinct malar stripe, ear-coverts, sides of neck, and flanks like mantle but greyer; chin, throat, and breast brownish-grey, tinged greenish-yellow; lower-breast more yellow; belly, vent, and under tail-coverts whitish, latter sometimes a little yellow; under wing-coverts and axillaries as in male but not so bright; tail-feathers as in male but with much less greenish-yellow, this being confined to inner and outer edges; primaries and secondaries and wing-coverts as in male but much browner and with narrower edging of greenish-yellow on primaries, only faint greenish tinge on secondaries, and no green on greater coverts. *Summer*.—By abrasion eye-stripe and rump become greener; mantle tinged green; throat, space between malar stripe and ear-coverts, and lower-breast, more yellowish.

Nestling.—Down, greyish-white, medium length; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside deep crimson, no spots; externally gape white (C. B. Ticehurst, *Brit. B.*, II, p. 192).

Juvenile (Plate 2). Male.—Resembling adult female on upper-parts but much more streaked dark brown, and with rump and upper tail-coverts brown and streaked like mantle; whole under-parts greyer, tinged pale yellow and much streaked brown, including under tail-coverts, but with centre of belly yellower and without streaks; tail, primaries, secondaries and primary-coverts as in adult male, but with edges of inner secondaries pale reddish-brown; all wing-coverts pale reddish-brown with only tinge of green. *Female*.—Like juvenile male, but with wing and tail-feathers as in adult female.

First winter and summer.—Like adult. The juvenile body-feathers, wing-coverts, and inner secondaries are moulted from July to Sept., but not primary-coverts, primaries, rest of secondaries, and tail.

Measurements and structure.—♂ wing 85-90 mm., tail 55-60, tarsus 17-19, bill from feathers 12-14 (12 measured). ♀ wing 83-85. Primaries: 1st minute and hidden, 2nd, 3rd, and 4th about equal and longest, 5th 2-4 mm. shorter, 6th 11-14 shorter; 3rd to 5th emarginated outer webs. Longest secondary equals 8th primary. Tips of



(HALF NATURAL SIZE.)

Juvenile plumages of 1, Lesser Redpoll (*Carduelis l. cabaret*). 2, Siskin (*Carduelis spinus*). 3, Hawfinch (*Coccothraustes c. coccothraustes*). 4, British Goldfinch (*Carduelis c. britannica*). 5, Greenfinch (*Chloris ch. chloris*).

[Face p. 48.]

secondaries square and slightly notched. Tail fairly deeply forked, inner webs being cut off at sharp angle. Bill short, wide and very deep, tapering sharply at point. A few gape-bristles.

Soft parts.—Bill whitish-flesh, tip dark brown. Legs and feet pale flesh; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. c. aurantiiventris* (south Europe and north Africa) is brighter above and more golden below, and *C. c. chlorotica* (Syria) is still brighter and smaller, *C. c. madaraszi* (Corsica, Sardinia) is somewhat darker and more brownish, also slightly smaller, *C. c. mühle*i (Greece to Bosnia and Servia, Italy) is similarly small, but lighter, *C. c. turkestanica* (Turkestan) is said to be larger, and *C. c. bilkewitchi* (north Persia) is said to be smaller again, but unknown to us. Heavy bill and yellow on wings and tail are specific characters.

FIELD-CHARACTERS.—Large flesh-coloured bill and olive-green plumage with a strongly contrasted yellow patch on primaries at once distinguish it when at rest. In flight, most conspicuous characteristics are yellow rump and bright yellow patches at base of tail-feathers. Call-note of male, a long-drawn “dwee,” uttered with tiresome iteration from early spring through summer. Another note, equally persistent, is “pee-wee.” The song, a warbling twitter in which call-note “dwee” is often introduced, lacks distinction; is often uttered as bird flies in circles with slowly flapping wings.

BREEDING-HABITS.—Nests in hedge-rows, evergreens, and bushes, large numbers sometimes breeding close to one another. Exceptionally in large trees or among ivy. *Nest*.—Built of twigs and moss, mixed with few bents, bits of wool, etc., usually lined roots and hair but sometimes feathers are freely used. *Eggs*.—4-6, rarely 7 or 8; ground-colour dirty white to pale greenish-blue, generally rather sparingly spotted and streaked red-brown and pale violet shell-marks; some with zone of spots, others thickly spotted or with no markings. Variable in shape and size. Average of 101 eggs, 20.2×14.5 mm. *Breeding-season*.—Begins late April or early May. Young sometimes in nest late as September. *Incubation*.—Lasts 13-14 days. *Fledging-period*.—13 days. At least two broods.

FOOD.—Mainly seeds (corn and many weeds), also turnip-seed, yew-berries, and buds of fruit trees. Young are fed partly on insects (larvæ of lepidoptera, diptera) and spiders, and partly on pulp of broken seeds.

DISTRIBUTION.—*British Isles*.—Resident. Common most parts, but only a visitor to Shetlands and most O. Hebrides, though it breeds Stornoway (Lewis).

MIGRATIONS.—*British Isles*.—Many home-bred birds emigrate

Sept. and return March. Great numbers of passage-migrants and winter-visitors arrive east coast Great Britain second week Oct. to mid-Nov., extremes Sept. 23 to Nov. 26, and depart mid-March to end of April, extremes March 12 to May 11. Occasional records of migrants on west coast third week Oct. to mid-Dec., and in mid-April. An autumn-immigration has also been noticed in Ireland.

DISTRIBUTION.—*Abroad.*—North and central Europe generally. Replaced by allied forms in south-west Europe and north-west Africa, some Mediterranean islands, in south-east Europe, Syria, Persia, and Turkestan.

Genus CARDUELIS Briss.

CARDUELIS Brisson, Orn., I, p. 36 (1760—Type, according to III, p. 53, "*Carduelis*" = *Fringilla carduelis* L., by tautonymy).

Contrary to custom Goldfinches, Siskins, Redpolls, Citril, Twite, and Linnets are here united into one genus, and this example has been largely followed since 1903, when Hartert adopted it in his book on palæarctic birds, in which (vol. I, p. 65) the reasons were fully explained. In Europe one might separate generally *Carduelis* (containing Goldfinch, Citril, Siskin, Redpolls) and *Linota* (containing Linnet and Twite), but in other countries these are connected by intermediate forms. Bill of genus, as here conceived, is hard, almost conical; tip thinner or thicker and shorter, base distinctly thicker, as if swollen. Upper mandible straight or very slightly curved. Nostrils covered by short feathers. Wings long and fairly pointed, first (obvious) to third primary forming tip of wing. Tail of medium length, emarginated for at least 5 mm. Tarsus short and strong. North and south America, northern Africa, Europe, and Asia to Himalayas, China, and Japan.

Key to species of genus CARDUELIS.

- | | | | |
|-----|--|---|-------------------------------------|
| 1 { | Quills with yellow or yellowish basal bar | 2 | |
| 1 { | Quills without yellow basal bar | 5 | |
| 2 { | Face red | | <i>C. carduelis</i> ♂ ♀ ad., p. 51 |
| 2 { | Face without red | 3 | |
| 3 { | Crown black; breast uniform yellow | | <i>C. spinus</i> , ♂ ad., p. 54 |
| 3 { | Crown not black; breast not uniform yellow | 4 | |
| 4 { | Lateral tail-feathers yellow at base | | <i>C. spinus</i> ♀ and juv., p. 54 |
| 4 { | Lateral tail-feathers partially white | | <i>C. carduelis</i> , juv., p. 52 |
| 5 { | Rump and abdomen yellow | | <i>C. citrinella</i> ♂ ♀ ad., p. 67 |
| 5 { | Rump and abdomen not yellow | 6 | |

- 6 { Black or slate-grey patch on upper-throat . . . 7
 { No black patch on upper-throat 8
- 7 { Rump with blackish streaks in adult *C. linaria*, pp. 59-64
 { Rump without blackish streaks in adult . . . *C. hornemanni*, pp. 64-66
- 8 { Rump with red patch *C. flavirostris* ♂ ad., p. 56
 { Rump without red patch 9
- 9 { Back rufous, with dark brown longitudinal spots : *C. cannabina*, p. 68
 { Back brown, with blackish longitudinal spots . 10
- 10 { Throat grey and brown, inner webs of outer tail-
 feathers with very narrow white edge . . . *C. citrinella*, juv., p. 67
 { Throat rufescent, inner webs of outer tail-feathers
 with wide white border *C. flavirostris* ♀ and juv., p. 57

CARDUELIS CARDUELIS

[*Carduelis carduelis carduelis* (L.)—THE CONTINENTAL GOLDFINCH.]

FRINGILLA CARDUELIS Linnæus, Syst. Nat., ed. x, i, p. 180 (1758—Juniper woods of Europe. Restricted typical locality : Sweden).

DESCRIPTION.—*Adult male and female*.—Like British Goldfinch but of a considerably less deep colour on mantle, back, sides of breast, and flanks ; nuchal spot larger and whiter ; sides of nape and ear-coverts purer white ; crimson of fore-head and throat decidedly deeper and more brilliant. *Juvenile*.—Greyer on upper-parts than that of British Goldfinch.

DISTRIBUTION.—*British Isles*.—"Immigrant" Goldfinches are recorded regularly east coast England end Sept. to early Nov. Until actual specimens have been examined, however, the Continental form cannot be definitely included.

DISTRIBUTION.—*Abroad*.—Europe from about lat. 65° in Norway and 60° in Russia to the Mediterranean. Replaced in Spain and north-west Africa, some Mediterranean islands, and the Atlantic isles as well as in western Asia, by more or less closely-allied forms.]

18. *Carduelis carduelis britannica* (Hart.)—THE BRITISH GOLDFINCH.

ACANTHIS CARDUELIS BRITANNICUS Hartert, Vög. pal. Fauna, I, p. 68 (1903—British Isles. Type, Rottingdean); *id.*, Brit. B., I, p. 211. *Carduelis elegans* Stephens, Yarrell, II, p. 117; Saunders, p. 173.

DESCRIPTION.—*Adult male and female. Winter*.—Narrow line

round base of bill and lores black; rest of fore-head, forepart of crown, chin, and upper-throat glossy crimson; back of crown, centre of nape, and hind-neck black, continuing in a band round sides of neck; sides of nape, ear-coverts, and lower-throat white; small whitish-brown nuchal spot; mantle, scapulars, and back dark tawny-brown; rump pale buff; upper tail-coverts: proximal half black, distal half white with buff-tips; breast and flanks brown-buff, often with a few yellow marks on sides of breast; centre of breast, belly, and vent white; under tail-coverts same tinged buff; axillaries white often tinged pale yellow; tail black with small white tips (larger on central feathers) and with large irregular oval white marks on middle of inner webs of two outer pairs and often a small mark on next pair (amount of white varies individually); primaries and secondaries black, inner webs fringed white and basal half of outer webs bright yellow (2nd primary has no yellow), all with small white tips becoming larger on innermost secondaries; primary-coverts black; greater coverts bright yellow with basal half black on outer and white on inner webs and innermost feathers buff and black on inner webs; median and lesser coverts black with small tawny-brown tips. This plumage is acquired by complete moult in Aug.-Sept. *Summer*.—No moult. Abrasion makes back of head browner, nuchal spot whiter, mantle greyer less tawny, under-parts whiter less buff, and white tips of wing- and tail-feathers gradually wear off.

Goldfinch (*Carduelis carduelis*).

Nestling.—(Not examined.)

Juvenile (Plate 2). *Male and female*.—Whole upper-parts greyish-buff with rather indistinct dark brown spots and streaks; chin, throat, breast, and flanks same but more whitish; belly dull white; vent and under tail-coverts pale buff; upper tail-coverts pale buff with blackish bases; tail, primaries, and secondaries as in adult but with tips tinged buff, especially those of tail and inner secondaries; greater coverts resembling adult but with yellowish-buff instead of bright yellow outer webs and tips; median coverts black with broad buff tips; lesser coverts same but with small buff tips.

First winter and summer. Male and female.—Like adults, but with tips of wing- and tail-feathers more buff, less white. The juvenile body-feathers, wing-coverts, and innermost secondaries are moulted in Aug.-Sept. but not primary-coverts, other remiges or rectrices.

Measurements and structure.—♂ wing 76-80 mm., tail 47-51, tarsus 13-15, bill from skull 12.5-13.5 (12 measured). ♀ wing 73-79. Primaries: 1st minute and hidden, 2nd, 3rd, and 4th about equal and longest, 5th 2-4 mm. shorter, 6th 10-12 shorter;

3rd to 5th emarginated outer webs. Longest secondary between 7th and 9th primaries, square-tipped with shallow notch. Tail fairly well forked. Bill thickish at base, tapering gradually to longish sharp point. Short bristle-like feathers directed forward cover nostrils and at gape.

Soft parts.—Bill pinkish-white with black-brown tip; legs and feet pale flesh; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For difference of *Carduelis c. carduelis* see under that form. *C. c. tschusii* (Corsica, Sardinia), *C. c. parva* (Madeira, Canaries, Azores), *C. c. africanus* (north-west Africa), *C. c. major* (Siberia, Turkestan), and other forms differ in size of wing, size and shape of bill, and in shade of colouring.

FIELD-CHARACTERS.—Crimson and bands of white and black on head, broad yellow band on black wings, and white spots on wings and tail distinguish it from all other British finches. Has a butterfly-like appearance as it flutters about seeding heads of thistles and other composite plants. Usual note, uttered persistently, whether bird is perched or flying, is a characteristic, clear, liquid "twit"; song, pleasing rather than loud, is an elaboration of this.

BREEDING-HABITS.—Breeds in gardens, orchards, avenues, etc., placing nest far out on spreading boughs. Occasionally also in hedges, and evergreens. *Nest*.—Neatly built of roots, bents, moss, and lichens, interwoven with wool, generally lined down, wool; hair sometimes added. *Eggs*.—4-5, occasionally 6 or 7; bluish-white ground-colour with few spots and streaks of red-brown, sometimes very dark, and ashy shell-marks. Generally more boldly marked than Linnets' eggs. Average of 100 eggs, 17×12.8 mm. *Breeding-season*.—Begins early May, exceptionally April, but most eggs of first brood laid second half May. *Incubation*.—Lasts 13-14 days; performed by hen. *Fledging-period*.—13 days. Usually two broods.

FOOD.—Seeds and insects, but chiefly former. Of seeds, thistles are great favourites, but many other weed-seeds are eaten and, it is said, also small seeds from cones. Of insects, small coleoptera, larvæ of lepidoptera, diptera, hymenoptera, and aphides.

DISTRIBUTION.—Confined to British Isles.—*British Isles*.—Resident, local, but generally distributed, and increasing except in Ireland where decreasing; scarce and local and often rare northern Scotland and only scarce vagrant O. Hebrides, Shetlands, and Orkneys.

MIGRATIONS.—*British Isles*.—Flocks and migrates locally autumn and winter (regular, east coast end of Sept. to first week Nov.), and some may emigrate. Passing birds (possibly of British form) have been noted in spring in various counties (cf. *Bull. B.O.C.*,

xx, p. 178; xxii, p. 182; xxiv, p. 173), and there are occasional records from south and west coast Lights, end Oct. and Nov., and south coast Lights April, which may refer to this or the typical form.

CARDUELIS SPINUS

19. *Carduelis spinus* (L.)—THE SISKIN.

FRINGILLA SPINUS Linnæus, Syst. Nat., ed. x, i, p. 181 (1758—Juniper woods of Europe. Restricted typical locality: Sweden).

Carduelis spinus (Linnæus), Yarrell, II, p. 126; Saunders, p. 175.



Siskin (*Carduelis spinus*) ♂ adult.

DESCRIPTION.—*Adult male. Winter.*—Top of head, chin, and centre throat black, feathers tipped grey; mantle and scapulars yellowish-green, faintly streaked black and tinged grey; upper tail-coverts green, tipped grey; rump greenish-yellow, unstreaked; lores greyish; cheeks and ear-coverts yellow, washed greyish-green; stripe behind eye, sides of nape and throat, breast and axillaries greenish-yellow, tinged greyish; belly greyish-white slightly tinged yellow; flanks and under tail-coverts same but broadly streaked black; tail-feathers: central pair brown-black fringed yellow, rest yellow with brown-black tips and shafts and outer pair with brown-black outer webs; wing-feathers black-brown, fringed yellow, 5th to 10th primaries and all secondaries with basal parts of outer webs bright, and inner webs pale, yellow, innermost secondaries tipped greyish-white; greater coverts same, tipped yellowish-green; median and lesser coverts yellowish-green with brown bases. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—No moult. Abrasion makes head more uniform black, upper-parts and under-parts brighter, less tinged grey.

Adult female. Winter and summer.—Upper-parts greenish-grey, streaked black-brown; rump greenish-yellow boldly streaked; upper tail-coverts as male; stripe behind eye, ear-coverts, and sides of nape grey-brown, tinged yellow; lores, chin, and belly greyish-white; sides of throat and breast same, but tinged yellow (varying in amount) and streaked black-brown; flanks and under tail-coverts whiter and more heavily streaked; wings and tail as male, but yellow not so bright or extensive, tips of greater coverts and inner secondaries often whitish.

Nestling.—(Not examined).

Juvenile (Plate 2). *Male and female*.—Crown, mantle, and upper tail-coverts buffish-brown streaked black-brown; hind-neck and rump buffish-grey streaked same; stripe behind eye, sides of neck and throat white, tinged yellow and spotted black-brown; rest of under-parts same but streaked not spotted; ear-coverts pale brown; wings as adult but inner secondaries and wing-coverts tipped pale buff.

First winter and summer. *Male*.—Like adult but rather more streaked mantle, and yellow at base of wing-feathers apparently not so extensive. *Female*.—Like adult, but decidedly browner head and mantle. The juvenile body-feathers, wing-coverts, and inner secondaries are moulted in Aug.-Sep., but not rest of wing-feathers, primary-coverts, or tail.

Measurements and structure.—♂ wing 70-74 mm., tail 41-44, tarsus 13-15, bill from feathers 8.5-10 (12 measured). ♀ wing 67-70. Primaries: 1st minute and hidden, 2nd and 3rd equal and longest, 4th usually 1-2 mm. shorter, 5th 5-6 shorter, 6th 11-12 shorter; 3rd and 4th emarginated outer webs and 5th less distinctly. Secondaries about equal 10th primary, tips square, slightly notched. Tail fairly well forked. Bill thickish and deep at base, tapering acutely to longish fine point. Nostrils covered with short bristle-like feathers and similar ones at gape.

Soft parts.—Bill dark brown, lower mandible pale; legs and feet dark brown; iris black.

CHARACTERS AND ALLIED FORMS.—No subspecies recognized. Fine bill distinguishes it at once from *Serinus*, and streaked under-parts from *C. citrinella*.

FIELD-CHARACTERS.—To greater part of Britain known only as visitor in winter, when it is essentially gregarious, and usually feeds in alders and birches, though at times among seeding composite plants. In its restless activity and varied postures resembles Tits. Olive-green of male, with yellow rump and eye-stripe and black crown (female shows little yellow and lacks black crown), stouter build and shorter tail distinguish it from Lesser Redpoll, with which it frequently consorts. Both when feeding and when passing from tree to tree flocks keep up an incessant twittering. Call-note of male, "tsyzyng," is characteristic.

BREEDING-HABITS.—Haunts coniferous woods in breeding-season, and nests often at great height from ground, frequently far out near end of branch. Accounts of nesting in low bushes in south England must be received with caution. *Nest*.—Small dead twigs with lichens attached; moss, bents, wool, etc.; lined roots, feathers, down, and hair. *Eggs*.—4-5, rarely 6, sometimes pale blue or else deeper tint, marked pale reddish spots and streaks, and occasionally a very dark brown mark. Average of 72 eggs,

16.2 × 12 mm. *Breeding-season*.—First broods early April to early May, second broods June. *Incubation*.—Said to last 12-14 days and to be performed by hen. Two broods.

FOOD.—Mainly seeds of trees, not only conifers, but many deciduous trees as well. Also buds recorded and young said to be fed on aphides.

DISTRIBUTION.—*England and Wales*.—Resident and autumn-to-spring visitor. A few pairs nest regularly Cumberland, and nests have been recorded Durham, Yorks., Salop, and north Wales. Evidence of having bred exceptionally Surrey, Sussex, Kent, and other south counties, in most cases unsatisfactory. *Scotland*.—Breeds from Perth northwards to Caithness and east Sutherland, also in east Ross, occasionally in Tweed, and in small numbers in Solway district, but otherwise a scarce visitor to west side, and only recently recorded from O. Hebrides (Barra, autumn). In Shetlands and Fair Isle has been noted on spring and autumn passages, and in Orkneys in autumn. *Ireland*.—Resident. Breeds locally all four Provinces.

MIGRATIONS.—*British Isles*.—Arrives in fluctuating numbers east coast Great Britain from third week Sept. to first week Nov., extremes Aug. 28 to Nov. 26, and departs in April and early May. Has been recorded from Lights of south coast Ireland in winter, which may point to occasional emigration of Irish residents.

DISTRIBUTION.—*Abroad*.—Locally in north Europe and northern Asia (but absent from the high north) as far south as Alps and rarely to north Italy, Balkans, and Caucasus. In winter common to Mediterranean, sometimes not rare in north-west Africa.

[NOTE. — The specimen of the NORTH AMERICAN GOLDFINCH, *Carduelis tristis* (L.), shot on Achill Island (Mayo), Sept. 6, 1894, had no doubt escaped from captivity (*cf. Zool.*, 1894, p. 396).]

CARDUELIS FLAVIROSTRIS

20. *Carduelis flavirostris flavirostris* (L.)—THE TWITE.

FRINGILLA FLAVIROSTRIS Linnæus, Syst. Nat., ed. x, i, p. 182 (1758—"Europa." Typical locality : Sweden).

Linota flavirostris (Linnæus), Yarrell, II, p. 160; Saunders, p. 193.

DESCRIPTION.—*Adult male*. *Winter*.—Crown and nape streaked black and buff; hind-neck same but rather paler; mantle, scapulars, and upper tail-coverts same but more dark rufous-brown, and buff edges rather darker; rump pink, tinged brown and tipped pale buff; ear-coverts and sides of neck buff finely streaked black-brown; lores, stripe over eye, chin and throat rufous-buff; breast and flanks rather paler buff, broadly streaked dark rufous-brown; belly white, tinged buff; under tail-coverts same, streaked black-

brown (varying individually); axillaries white, tinged buff; tail-feathers brown-black, two central pairs edged buff, rest fringed white on outer webs and more broadly whitish-buff on inner webs; wing-feathers brown-black tipped buff and edged white on inner webs, inner primaries conspicuously edged white on outer webs, secondaries narrowly (innermost broadly) edged buffish-brown; greater coverts black-brown, edged and tipped pale buff; median and lesser coverts same but tipped darker rufous-buff. This plumage is acquired by complete moult in Sept.-Oct. *Summer*.—No moult. Abrasion makes upper-parts much darker, less buff, except hind-neck, feathers of which have greyish-white edges (concealed by buff edges in winter); rump much brighter pink; throat less uniform and rather paler buff; breast and flanks much more strongly striated with rufous-brown as buff edges gradually wear away.

Adult female. Winter and summer.—Like adult male but rump like mantle and usually without any pink, but sometimes faintly tinged pink.

Nestling.—(Not examined.)

Juvenile.—Similar to adult female, but edgings of feathers of crown and nape slightly greyer, not so buff; mantle and scapulars slightly more rufous; rump slightly paler without pink; lores, ear-coverts, throat and upper-breast not so deep a buff as adult and more streaked especially on throat and breast; chin with indistinct brown streaks; flanks slightly more rufous, not so yellowish-buff as adult.

First winter and summer.—Like adults. The juvenile body-feathers, wing-coverts, and innermost secondaries are moulted in Sept.-Oct., but not rest of remiges, primary-coverts, or tail.

Measurements and structure.—♂ wing 72-80 mm., tail 54-63, tarsus 14-16, bill from skull 8.5-10 (12 measured). ♀ wing 70-75. Primaries: 1st minute and hidden, 3rd usually longest, 2nd and 4th sometimes equal but generally 1-2 mm. shorter, 5th 2-4 shorter; 3rd to 5th emarginated outer webs. Secondaries between 9th and 10th primaries. Tail fairly deeply forked. Bill thick and deep at base, tapering sharply to point. Nostrils covered by short bristle-like feathers and similar ones at gape.

Soft parts.—Bill yellow, darker at tip (duller in young birds); legs, feet, and iris dark brown.

CHARACTERS AND ALLIED FORMS.—*C. f. brevirostris* (Asia Minor, etc.) has whitish edgings to feathers of upper-parts, *C. f. stoliczkae* (Kashmir) is paler sandy-brown, *C. f. rufostriata* (Tibet) has larger bill. The dull upper-parts, uniform buff throat, pink rump, and yellow bill are distinctive specific characters. Juvenile has darker upper-parts and buffer sides of head, throat and breast than juvenile Redpolls, and lacks greyish-black chin.

FIELD-CHARACTERS.—Yellow bill is its *outstanding feature*, but

dark upper-parts and buff chin are also distinctive. Tail longer in proportion than Linnet's or Lesser Redpoll's, and never any crimson on fore-head or breast, though rump in male—displayed in courtship—is rose-red. After autumn-moult general coloration mealy-brown, but in flight white margins of greater coverts and inner primaries are conspicuous. In nesting-season affects open moorlands, in autumn flocks in pastures, feeding on seeds of knapweed and kindred plants; higher ground deserted in winter and region of coasts much resorted to. Usual call-note, long-drawn "deek"; flocks, when feeding or changing ground, maintain continuous twitter.

BREEDING-HABITS.—Haunts moorlands and wind-swept islands. Breeds almost in colonies, nests being at no great distance apart. Frequently close to or actually on ground, sometimes under shelter of upturned sod, sometimes among ivy or creepers on walls and rocks, in bushes in gardens, long heather, young corn, stone-heaps, rabbit-holes, etc. *Nest.*—Grasses, stalks, etc., with few twigs and some moss, lined hair and wool and sometimes a few feathers. *Eggs.*—Usually 5-6, sometimes 7, not unlike Linnet's, but bluer and with more decided markings, which are generally a few bold streaks and spots of very dark red-brown. White eggs have been recorded. Average of 100 eggs 16.9×12.6 mm. *Breeding-season.*—Latter half May and early June: in Ireland rather earlier, but fresh eggs have been found as late as August. *Incubation-period.*—Not exactly known, but about a fortnight, and share of sexes unknown. Usually two broods.

FOOD.—Mainly seeds, grain when available and young turnips in Shetlands; also insects.

DISTRIBUTION.—*England and Wales.*—Resident. Breeds very locally most moorlands from east Cheshire, north Staffs., north Derby., and west Yorks. northwards, and in Lancs. at lower levels. Has bred Isle of Man. Forsakes high ground in winter. Small colony reported nesting north Devon 1904, but otherwise only known as somewhat uncertain winter-visitor to south, though in some years plentiful on parts of south coast. Very rare visitor Cornwall. Suspected of nesting in north Wales. *Scotland.*—Much more common and general than in England, especially on west coast and Hebrides, Orkneys, and Shetlands. In south-west and on lower ground on east side scarce as nester. *Ireland.*—Breeds all counties except those of central Plain.

MIGRATIONS.—*British Isles.*—The coasts are resorted to in winter by inland breeding-birds; but migrants, possibly from oversea, arrive east coast Oct. and return March. In Ireland an autumn-immigration has been noted on north and west coasts.

DISTRIBUTION.—*Abroad.*—North Norway, Lapland, and north

Finland, in winter over Europe, but very rare in Mediterranean countries. Replaced by other races from Asia Minor and Caucasus to Persian Turkestan, etc., and in Tibet and Manchuria.

CARDUELIS LINARIA

21. *Carduelis linaria linaria* (L.)—THE MEALY REDPOLL.

FRINGILLA LINARIA Linnæus, Syst. Nat., ed. x, i, p. 182 (1758—Europe. Restricted typical locality: the alder woods of Sweden).

Linota linaria (Linnæus), Yarrell, II, p. 133; Saunders, p. 189.

DESCRIPTION (Plate 3).—*Adult male. Winter.*—Much resembling *C. l. cabaret* (p. 62) but in addition to larger size having crimson of crown brighter; hind-neck and mantle less tawny, paler buff and often buffish-grey; rump whiter with scarcely any buff and occasionally with very few dark streaks; upper tail-coverts tipped greyish-white to pale buff; stripe over eye, ear-coverts, and sides of neck less buff, more greyish-white; cheeks, throat, and breast more pearly-pink, tips of feathers being whiter; flanks greyish-white, streaked dark brown with scarcely any buff; edgings of tail and wing-feathers and especially inner secondaries and tips of greater and median wing-coverts pale buff to greyish-white. *Summer.*—No moult. Abrasion has same effect as in *C. l. cabaret* and differences between the two forms in worn plumage are not so observable but upper-parts of *C. l. linaria* are more marked with greyish-white; rump and flanks whiter; remains of edgings of tail and wings and tips of wing-coverts whiter.

Adult female. Winter.—Resembling that of *C. l. cabaret* but with same differences as in male on upper-parts, sides of head, flanks, wings and tail; throat and breast buffish-white to white. *Summer.*—In very worn plumage difficult to distinguish, but rump always paler.

Nestling.—(Not examined.)

Juvenile.—Like that of *C. l. cabaret*.

First winter and summer. Male.—Like that of *C. l. cabaret* with same differences as in adult female. More often with a little pink on breast than in *C. l. cabaret*.

Measurements and structure.—♂ wing 72-78 mm., tail 49-58, tarsus 14-16, bill from skull 8.5-10 (14 measured). ♀ wing 69-76. Other details as in *C. l. cabaret*.

Soft parts.—As in *C. l. cabaret*.

FIELD-CHARACTERS.—Can always be distinguished in winter from Lesser Redpoll by its paler coloration, having a greyer and less tawny appearance (H.F.W.).

BREEDING-HABITS.—Breeds chiefly in birch-forest or on willows, though exceptionally in grass-tussocks and on top of a stump; tends to breed in colonies, like Twite. *Nest.*—Twigs of

birch or heather as foundation, on which are roots, bents, bark-fibre, etc.; thickly lined down and feathers, or sometimes hair. *Eggs*.—Usually 5-6, occasionally only 4 or 7. Ground-colour rather deep blue and surface dull and glossless, spotted and streaked light brown. Average of 100 eggs, 16.98×12.65 mm. *Breeding-season*.—Latter part May till August, but generally June, and varying according to latitude. Apparently sometimes two broods. *Incubation-period*.—Not precisely known.

Food.—Mainly seeds, especially birch and alder, but also of many plants. Also insects (small caterpillars, larvæ of hymenoptera, etc.).

DISTRIBUTION.—*British Isles*.—Irregular autumn-winter visitor along whole east coast Great Britain, but more common northern isles and east Scotland and north-east England. Arriving mid-Oct. to end of Nov., occasionally as early as mid-Aug. Departure mid-March to end May. Occasionally arrives great numbers, as in 1829, 1847, 1855, 1861, 1863, 1873, 1885, 1897, 1910. More rarely recorded spring. Elsewhere in Great Britain rare autumn or winter straggler, as it is in Ireland, where it appears chiefly in western islands.

DISTRIBUTION.—*Abroad*.—Northern portions of Northern Hemisphere, the northern limit of its breeding-range overlapping the southern range of *C. hornemanni exilipes*; in Europe as far south as Baltic and coast of East Prussia. In winter and on migration over greater part of Europe, parts of central Asia, and United States.

[*Carduelis linaria holboellii* (Brehm)—HOLBÖLL'S REDPOLL.*

LINARIA HOLBOELLII Brehm, Handb. Naturg. Vög. Deutschl., p. 280 (1831—Described from migrants obtained in Germany).

L. holboellii Saunders, p. 189 (in text).

DESCRIPTION.—Differs from *C. l. linaria* only in having a larger bill measuring, in adult males, from skull to tip 10.5-12 mm.

DISTRIBUTION.—*British Isles*.—Vagrant. One, Aston Clinton (Bucks.), Dec. 14, 1895 (*Vög. pal. Fauna*, I, p. 80). One said Achill Island, Mayo (*Bull. B.O.C.*, XII, p. 15). Possibly some of a flock in Yorks., 1881 (*Birds Yorks.*, I, p. 187). A number Fair Isle autumn 1910. Two Shetlands, Oct. 28, 1910. One Isle of May (Forth), Oct. 23, 1910. A number Lothians, Oct., 1910. One Cambridge, Dec. 12, 1910. (*Brit. B.*, IV, pp. 291, 369, V, p. 60).

* As this form appears to breed within the same area as *C. l. linaria* it may represent only an individual variation, and until this question is finally decided we cannot admit it fully to the list. Occurrences of specimens possessing the characters assigned to this form should, meanwhile, be carefully recorded.

DISTRIBUTION.—*Abroad.*—Polar regions of Old and New Worlds, in winter southwards to Holland, Germany, Austria, Hungary, Russia, central Asia, Japan, and occasional during migration in parts of north-east North America.]

22. *Carduelis linaria rostrata* (Coues)—THE GREENLAND REDPOLL.

ÆGIOTHUS ROSTRATUS Coues, Proc. Ac. Nat. Sci. Philadelphia, Nov., 1861, p. 378 (S. Greenland).

L. rostrata, Saunders, p. 190 (in text).

DESCRIPTION (Plate 3).—*Male and female.*—Except for much larger size, very similar to *C. l. cabaret*, but rump, sides of neck, and tips to wing-coverts more greyish-white ; as compared to *C. l. linaria*, dark streaks on upper-parts (including rump) and especially on flanks and sides of breast broader ; darker and more tawny-buff on upper-parts ; more buff on flanks, and in female and first-winter male also on throat and breast ; pink on breast of adult male appears to extend not so far down sides of breast and belly.

Nestling.—(Not examined.)

Juvenile.—Like that of *C. l. cabaret*, but dark stripes on upper- and under-parts slightly broader.

Measurements.—♂ wing 78-85 mm., tail 56-62, tarsus 15-17, bill from skull 10-11 (12 measured). ♀ wing 75-81. Bill broader and deeper as well as longer than in *C. l. linaria*.

BREEDING-HABITS.—As this and Hornemann's Redpoll (p. 64) both apparently breed in Greenland, it is at present not possible to distinguish records. Nesting-sites must necessarily be very similar, and we have no means of distinguishing eggs from the scanty material to hand.

DISTRIBUTION.—*England.*—None. *Scotland.*—Vagrant. In recent years fairly regular in northern isles. Barra (O. Hebrides) one, Oct. 8, 1896 ; one, Nov. 10, 1898 ; one, Oct. 13, 1900 ; two, Sept., 1901. St. Kilda, five, Sept., 1911. Flannans, several, Oct. and Nov., 1905. Tiree (I. Hebrides), two, Sept., 1913. Fair Isle (Shetlands), abundant Sept. and Oct., 1905, small numbers Sept. 21, 1907, Sept.-Nov., 1908, Oct., 1911, and autumn, 1913. Shetlands, several Oct. and Nov., 1907. Suleskerry (Orkneys), one, Oct., 1911. *Ireland.*—Several Achill Island (Mayo) and two or more Tearaght (Kerry) have been assigned to this form. One Rathlin (Antrim), Sept. 25, 1913.

DISTRIBUTION.—*Abroad.*—Summer-resident in south Greenland. In winter south-westward through Canada and parts of western United States.

23. *Carduelis linaria cabaret* (P.L.S. Müll.)*—THE LESSER REDPOLL.

FRINGILLA CABARET P.L.S. Müller, Natursystem, Suppl., p. 165 (1776—Ex Daubenton and Buffon. Europe. Restricted typical locality: France).

Acanthis linaria britannica Schmiedeknecht, Wirbelt. Eur., p. 128 (1906—British Isles.)

Linota rufescens (Vieillot), Yarrell, II, p. 146; Saunders, p. 191.

DESCRIPTION (Plate 3). — *Adult male.* *Winter.*—Crown dark glossy crimson; nape, hind-neck, mantle, and scapulars tawny-brown, streaked brown-black; back more greyish-white streaked same; rump rosy-pink more or less concealed by buff tips and less streaked than back; upper tail-coverts dark brown, edged and tipped buff; narrow line on fore-head, lores and chin black; line over and behind eye pale buff; ear-coverts buffish-brown; sides of neck paler greyish-buff, streaked dark brown; cheeks rosy-pink much obscured by buff tips; throat, upper-breast, and sides of lower-breast rosy-pink tipped buffish-white; centre of breast, belly, and under tail-coverts white, latter more or less streaked brown and often tinged rosy-pink; flanks buff, strongly streaked dark brown and marked rosy-pink on upper portion; axillaries buffish-white; tail black-brown narrowly fringed whitish on inner, and buff on outer, webs; wings same, inner secondaries with broader buff fringes on outer webs; greater and median coverts black-brown, broadly tipped buff; lesser coverts same but narrowly tipped buffish-brown. This plumage is acquired by complete moult in Sept.-Oct. N.B.—Amount of rosy-pink on rump and under-parts varies individually. Pink is replaced by golden-yellow very rarely in wild birds, but usually in captive ones after moulting. *Summer.*—No moult. By abrasion of fringes and tips of feathers, upper-parts gradually become less tawny more dark brown, fringed greyish-white especially on nape, hind-neck, centre of mantle, and back; sides of neck greyish-white, streaked dark brown; flanks same with more pink showing; all pink very much brighter and more extensive; tips to wing-coverts smaller and paler.

Adult female. *Winter.*—Like adult male but generally no pink (very rarely a slight tinge) on under-parts or rump, throat and upper-breast being buff streaked dark brown on sides; black of chin sometimes rather more extensive than in male; tips to wing-coverts generally rather paler. *Summer.*—No moult. Abrasion has same effect as in male.

Nestling.—Down, greyish; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside carmine, no tongue-spots, gape white (C. B. Ticehurst, *Brit. B.*, II, p. 193).

* The name *cabaret* is forty years older than *rufescens*.—E.H.

Juvenile (Plate 2).—*Male and female*.—Crown, nape, and hind-neck dark brown, feathers edged greyish-white; mantle darker with more buffish-brown edgings; rump buffish-white streaked black-brown; upper tail-coverts same but more dark buff; ear-coverts brownish-buff streaked dark brown; chin and lores greyish-black; sides of neck, throat, breast, and flanks buffish-white streaked black-brown; belly and under tail-coverts greyish-white; tail and wings as in adult but fringes of inner secondaries and tips to wing-coverts paler whitish-buff. Much resembling adult female in worn summer-plumage but with no crimson on crown, much less black on chin, and more dark streaks on throat and breast.

First winter and summer. Male.—Like adult female but almost always with a trace of pink on rump and usually with a trace on cheeks, whereas this is more exceptional in female. *Female*.—Like adult female. The juvenile body-feathers, wing-coverts, and sometimes one or two inner secondaries are moulted in Aug.-Sep., but not primary-coverts, rest of remiges, or rectrices.

Measurements and structure.—♂ wing 67-73 mm., tail 47-55, tarsus 13-15, bill from skull 8.5-10 (12 measured). ♀ wing 63-69. Primaries: 1st minute and hidden, 3rd longest, 2nd and 4th sometimes equal to it, sometimes 1-2 mm. shorter, 5th 2-5 shorter, 6th 9-10 shorter; 3rd to 5th emarginated outer webs. Secondaries between 9th and 10th primaries, tips square, slightly notched. Tail fairly deeply forked. Bill thick and deep at base tapering sharply to point. Nostrils covered by short bristle-like feathers and similar ones at gape.

Soft parts.—Bill yellow with dark brown tip and upper-part of upper mandible; legs, feet, and iris dark brown.

CHARACTERS AND ALLIED FORMS.—Darkest, most tawny, and smallest form. *C. l. linaria* greyer and larger, *C. l. rostrata* very similar in coloration but still larger and with very heavily streaked flanks, *C. h. hornemanni* and *C. h. exilipes* very pale upper-parts, unstreaked rump and purer white under-parts. All forms distinguished from Twite and Linnet at all ages by black or blackish chin.

FIELD-CHARACTERS.—Resembles other Redpolls in its dark crimson fore-head, but differs from them in its small size, more rufescent coloration and buff—not white—wing-bars; from Twite in its rotund shape and shorter tail. From autumn to spring roams country in closely-packed flocks, feeding upon seeds of birches, alders and (less often) of herbaceous plants, especially composites. In its acrobatic postures and continuous twitter resembles Siskin, with which it frequently associates. In breeding-season less in evidence and easily overlooked, but for its curious and characteristic love-flight. Song, a frequently repeated rippling

trill, sometimes uttered from perch, but more often in flight, which is wavering in character and usually at a height of thirty feet or more.

BREEDING-HABITS.—Tends to breed sociably, but many isolated nests may also be found. Sites variable: sometimes high hedges or isolated bushes, outskirts of plantations, young conifers, but also at considerable heights in forest-trees, and exceptionally young heather or bracken. *Nest.*—Recognizable by foundation of twigs and roughly-furnished external appearance due to ends of coarse bents and stalks; lined white down, sometimes hair and feathers. *Eggs.*—4-5, occasionally 6, with same characteristics as Mealy Redpoll. Occasionally found without markings. Average of 100 eggs, 15.97×12.2 mm. *Breeding-season.*—Irregular; a few April, but usually latter half May or early June, and in Alps from end April onwards. Apparently one brood as a rule but sometimes two. *Incubation.*—Under a fortnight (11 days, A. Taylor).

FOOD.—Chiefly seeds (alder, birch, bullrush, and many small plants), but also minute insects and their eggs.

DISTRIBUTION.—*England and Wales.*—Resident. Breeds most counties, but locally and especially so in southern England, and Wales, and very sparingly in south-west England, while in extreme south-west it is rare even in autumn and winter, when it becomes more generally distributed elsewhere. *Scotland.*—Resident. More generally distributed in wooded districts than in England, but uncommon in north-west, and appears not to breed Caithness. Breeds sparingly I. Hebrides, and has nested Barra (O. Hebrides). Said to nest Orkneys, but rare at any time Shetlands. *Ireland.*—Resident. Generally distributed, even in the bare west.

MIGRATIONS.—*British Isles.*—Flocks said to arrive Yorks. coast in mid-Sept. and Oct., and it becomes more generally common east coast in winter. Some at least of our breeding birds appear to emigrate in winter. No migration noted in Ireland.

DISTRIBUTION.—*Abroad.*—Alpine regions, probably also Carpathians and Balkans, and possibly the Caucasus.

CARDUELIS HORNEMANNI

24. *Carduelis hornemanni hornemanni* (Holb.)—HORNE-MANN'S REDPOLL.

LINOTA HORNEMANNI Holböll, Naturh. Tidskr., iv, p. 398 (1843—Greenland).

L. hornemanni, Yarrell, II, pp. 141 and 144 (in text); Saunders, p. 189 (in text).



(HALF NATURAL SIZE.)

1, Lesser Redpoll (*Carduelis l. cabaret*). 2, Mealy Redpoll (*C. l. linaria*). 3, Greenland Redpoll (*C. l. rostrata*). 4, Coues's Redpoll (*C. h. exilipes*). 5, Hornemann's Redpoll (*C. h. hornemanni*).

[Face p. 64.]

DESCRIPTION (Plate 3).—*Adult male.* *Winter.*—Differs from *C. l. linaria* in rump being pure white, unstreaked (tinged pink in adult male); rest of upper-parts including upper tail-coverts paler, feathers having white or pale buff edges and tips; sides of neck and flanks white with few dark streaks; stripe over eye white; ear-coverts tinged buff; under tail-coverts white, usually without any dark streaks; rest of under-parts pure white, and pink of cheeks, throat, and breast considerably paler and less marked; edges and tips of tail and wings, and tips of wing-coverts, white. *Summer.*—Abrasion of fringes of feathers of upper-parts makes it more like *C. l. linaria*, but unstriped rump, remains of white fringes and tips to feathers, and scarcely streaked flanks, easily distinguish it.

Adult female and first winter male.—Like adult male but with no pink; hind-neck and mantle slightly more buff; sides of neck, breast, and throat pale sandy-buff; flanks slightly more streaked; tips of wing-coverts sometimes pale buff not pure white.

Nestling and juvenile.—(Not examined).

Measurements.—♂ wing 82-88 mm., tail 57-65, tarsus 15-17, bill from skull 9.5-11 (5 measured). ♀ wing 80-85, tail 57-62, tarsus 16-17, bill 9-10 (5 measured). Bill, depth and width like *C. l. rostrata*.

CHARACTERS.—Unstriped rump and white under-parts distinguish the two forms of *C. hornemanni* at once from all forms of *C. linaria*.

BREEDING-HABITS.—Owing to absence of trees in breeding-area nests always on ground, sheltered by rocks and sometimes dwarf vegetation. *Eggs.*—Rather larger than those of Mealy Redpoll, but similar in colouring. Average of 27 eggs from Greenland 17.64×13.04 mm. *Breeding-season.*—Not before latter half of June. One brood. (See also Greenland Redpoll.)

FOOD.—Seeds of arctic plants and small insects.

DISTRIBUTION.—*Great Britain.*—Very rare vagrant. Specimens from Spurn (Yorks.), Oct., 1883, and Oct., 1893, have been assigned to this form (*Birds Yorks.*, I, p. 189), and one near Whitburn (Durham), April 24, 1855 (Saunders, p. 189). Five Fair Isle (Shetlands), Sept. and Oct., 1905 (W. E. Clarke, *Ann. S.N.H.*, 1906, p. 17). One Unst (Shetlands), Oct., 1905 (E. Hamilton, *op. c.*, 1910, p. 54). (*cf. Brit. B.*, I, p. 183; III, p. 378).

DISTRIBUTION.—*Abroad.*—Resident in Greenland. Once obtained in France, in Spitsbergen, Franz-Josef Land, Jan Mayen, and perhaps Iceland, but probably in all these places as a rule only an accidental visitor. In winter regularly in parts of North America.

25. *Carduelis hornemanni exilipes* (Coues) — COUES'S REDPOLL.

ÆGIOTHUS EXILIPES Coues, Proc. Ac. Nat. Sci. Philadelphia, Nov., 1861 (pub. 1862), p. 385 (Fort Simpson, Arctic America).

DESCRIPTION (Plate 3).—*Adult male*.—Like *C. h. hornemanni* but smaller and more inclined to buff on hind-neck and mantle; rump not so pure a white but unstreaked; upper tail-coverts with narrower white edgings and tips; flanks slightly more streaked; pink of breast slightly stronger; sides of head slightly more buff; under tail-coverts often streaked.

Adult female and first winter male.—Like those of *C. h. hornemanni* but slightly darker and more buff on upper-parts and flanks rather more streaked.

Nestling.—(Not examined.)

Juvenile.—Like that of *C. l. cabaret* but very slightly more marked with greyish-white on crown, mantle and back; belly rather purer white; rump streaked not uniform as in adult.

Measurements.—♂ wing 73-79 mm., tail 52-59, tarsus 13.5-16, bill from skull 8-9 (14 measured). ♀ wing 69-76. Bill depth and width like *C. l. linaria*.

BREEDING-HABITS.—Very similar to those of other Redpolls, and like them shows social tendency, breeding in low birch and willow scrub; H. Pearson detected no difference in breeding-habits of this and Mealy Redpoll. *Eggs*.—4-6 with characteristic dull greenish-blue ground. Average of 9 authentic eggs, 17.35×12.91 mm. *Breeding-season*.—In Lapland about mid-June. One brood.

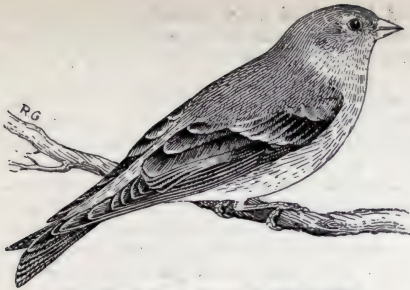
DISTRIBUTION.—*Great Britain*.—Very rare vagrant. A specimen assigned to this form occurred at Easington (Yorks.), winter 1893-4, and two others at Skeffling (Yorks.), Dec. 30, 1898 (*Birds Yorks.*, I, p. 188). Three Fair Isle, Oct. 26, Nov. 3, Nov. 5, 1910 (W. E. Clarke, *Studies in Bird Migration*, II, p. 111).

DISTRIBUTION.—*Abroad*.—Lapland and north Russia, northernmost portions of continents of Asia and America. In winter southwards to East Prussia (rare), Japan, and northern United States of America.

CARDUELIS CITRINELLA

26. *Carduelis citrinella citrinella* (L.)—THE CITRIL FINCH.

FRINGILLA CITRINELLA Linnaeus Syst. Nat, ed. XII, I, p. 320, (1766—"Hab. in Europa australi." Restricted typical locality: Alps; Hartert, Vög. pal. Fauna, I, p. 81). Citril Finch, Yarrell, II, p. 113 (in footnote); Saunders, p. 178 (in text); *Chrysomitris citrinella*, id., Brit. B., I, p. 12.

Citril Finch (*Carduelis c. citrinella*) ♂ adult.

DESCRIPTION. — *Adult male.* *Winter.*—Fore-head, forepart of crown, round eye, and cheeks golden-green; rest of crown, ear-coverts, nape, and hind-neck brownish blue-grey; sides of neck paler blue-grey; mantle and scapulars green, tinged brownish-grey and faintly streaked dark brown; back and rump greenish-yellow; upper tail-coverts, chin, centre of throat, and breast yellowish-green, all slightly tipped blue-grey; centre of belly and under tail-coverts greenish-yellow; vent white; sides and flanks brownish-grey tinged green; axillaries white fringed yellow; tail- and wing-feathers and primary-coverts brown-black, tipped and fringed on inner webs whitish and on outer yellowish-green; greater coverts with distal half yellowish-green, very narrowly tipped grey; median and lesser coverts showing entirely yellowish-green. This plumage is acquired by complete moult in early autumn. *Summer.* — No moult. Abrasion makes mantle rather more striated, not so uniform, but otherwise effects little change.

Adult female. *Winter and summer.*—Like male but less green on crown, browner nape and sides of neck, browner more streaked mantle, lower-throat brownish-grey, all yellow and green duller and darker.

Nestling.—(Not examined.)

Juvenile.—Crown and mantle brown, streaked brown-black; nape, rump, and upper tail-coverts paler more buff-brown, streaked same; sides of neck, chin, and throat brownish- or yellowish-grey, streaked dark brown; breast and flanks pale brown, streaked dark; belly and under tail-coverts whitish-buff, tinged yellow; axillaries white, edged yellow; tail- and wing-feathers as adult but with fringes of outer webs more buff less green; innermost secondaries and all wing-coverts fringed and tipped pale buff.

First winter and summer. *Male.*—Like adult but browner, more streaked on mantle and fringes of outer webs of tail- and wing-feathers and primary-coverts less green, more buff; one or two of outer greater coverts fringed pale buff, and occasionally

an unmoulted buff-edged inner secondary. The juvenile body-feathers, wing-coverts, and innermost secondaries are moulted in early autumn, but not other wing-feathers, primary-coverts, or tail.

Measurements and structure.—♂ wing 75-79 mm., tail 47-51, tarsus 13.5-15, bill from skull 8.5-9.5 (10 measured). ♀ wing 73-76. Primaries: 1st minute and hidden, 3rd and 4th about equal and longest, 2nd and 5th 1-2 mm. shorter, 6th 7-9 shorter; 3rd to 5th emarginated outer webs. Secondaries equal 10th primary, square-tipped and notched. Tail fairly deeply forked. Bill thick and deep at base, tapering sharply to point. Nostrils covered with short bristle-like feathers, and similar ones at gape.

Soft parts.—Bill horn-brown, paler under lower mandible; legs and feet and iris brown.

CHARACTERS AND ALLIED FORMS.—In *C. c. corsicana* (Corsica) mantle of male is more rusty-brown with darker streaks, under-parts paler yellow. Grey nape and sides of neck and uniform, unstreaked under-parts distinguish it at once from Siskin and Serin, while latter has much shorter and thicker bill.

BREEDING-HABITS.—Haunts mountain-sides and breeds chiefly in large conifers, often at considerable heights, but occasionally also in thatched roofs of alpine huts, according to some writers. *Nest.*—Beautifully built of grasses, moss, and lichens, lined hair, feathers and down, and decorated with cocoons outside. *Eggs.*—4-5, pale bluish in ground-colour, with usual red-brown streaks and spots as in Siskin and Goldfinch. Average of 41 eggs, 16.5×12.59 mm. *Breeding-season.*—Begins end April in Switzerland, but eggs may be found till late June, so possibly two broods are reared. *Incubation.*—Period not precisely known.

FOOD.—Chiefly seeds of fir and spruce, as well as of various plants, especially dandelion, also buds and small insects.

DISTRIBUTION.—*England.*—One. Female, Yarmouth (Norfolk), Jan. 29, 1904 (J. H. Gurney, *Zool.*, 1905, p. 91).

DISTRIBUTION.—*Abroad.*—Mountain-systems of central and south Europe. Replaced by a local race in Corsica and Sardinia.

CARDUELIS CANNABINA°

27. *Carduelis cannabina cannabina* (L.)—THE LINNET.

FRINGILLA CANNABINA Linnaeus, Syst. Nat., ed. x, i, p. 182 (1758—Europe. Restricted typical locality: Sweden).

Linota cannabina (Linnaeus), Yarrell, II, p. 153; Saunders, p. 187.

DESCRIPTION.—*Adult male.* *Winter.*—Crown streaked blackish-brown and buff with concealed spots of dull crimson; nape same

but no crimson; hind-neck, sides of neck, and ear-coverts greyer and more uniform; mantle and scapulars chestnut with blackish-brown streaks and dark buff edges; back and rump paler and more uniform; upper tail-coverts black, fringed broadly dark and pale buff; lores and line round eye buff; chin and throat buff with broad streaks of greyish-black; breast pink, concealed by buff fringes; flanks buff, streaked chestnut-brown; belly pale buff; vent whitish; under tail-coverts pale buff with black mesial stripes; axillaries white; tail brown-black, central pair edged buff, rest with narrow white edgings to outer webs and broad ones to inner webs; primaries as tail-feathers, white edgings to inner five feathers conspicuous; secondaries and primary-coverts same but outer webs fringed buff not white, innermost secondaries and wing-coverts like mantle. This plumage is acquired by complete moult from August to October. *Summer*.—No moult. Abrasion greatly alters appearance which varies according to amount of wear. In much worn examples (July) centre of crown is crimson; rest of crown, nape, hind-neck, sides of neck, and ear-coverts brownish-grey; mantle, scapulars, and wing-coverts almost uniform chestnut; chin and throat greyish-white with brown streaks; breast crimson (varying in extent); belly greyish-white; flanks almost uniform chestnut-buff. N.B.—The most worn examples are usually brightest and most uniform, but there is considerable individual variation. In Redpolls, Linnets, Crossbills and Grosbeaks, not only the tips and edges of the feathers wear down but the radii also: in the crimson feathers only the rami are pink, and these are divided by grey radii which wear away and thus cause the pink rami to show up brilliantly. Wild birds occasionally, and birds which have moulted in captivity always, have dull gold instead of pink on crown and breast.

Adult female. Winter and summer.—Resembling adult male but with no pink; darker, more heavily streaked brown-black, and less chestnut on upper-parts; streaked dark brown on breast and flanks.

Nestling.—Down, grey; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside deep orange; no spots. (A. G. Leigh, *Brit. B.*, III, p. 154.)

Juvenile.—Much resembling adult winter-female but chin and throat almost uniform buffish-white and without decided dark streaks; dark streaks much narrower on upper-parts, breast, and flanks. Male considerably more chestnut-buff on upper-parts than female.

First winter and summer.—Male and female like adults. The juvenile body-feathers and inner secondaries are moulted in August and September, but not remiges, primary-coverts, or rectrices.

Measurements and structure.—♂ wing 77-82 mm., tail 50-57, tarsus 16-17, bill from skull 10-11 (12 measured). ♀ wing 75-79. Primaries : 1st minute and hidden, 2nd, 3rd, and 4th about equal and longest, 5th 4 mm. shorter ; 3rd, 4th, and 5th emarginated outer webs. Longest secondary equal to 9th primary. Tail fairly deeply forked. Bill thick and deep at base, tapering sharply to point. Nostrils covered with short bristle-like feathers, and similar ones at gape.

Soft parts.—Bill dark brown with greyish base to lower mandible ; legs and feet dark brownish-flesh ; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*C. c. meadewaldoi* (western Canaries), *C. c. harterti* (eastern Canaries), *C. c. mediterranea* (Mediterranean countries), *C. c. nana* (Madeira), and *C. c. fringillirostris* (Asia Minor, Persia, Turkestan) differ in measurements and in coloration, but are generally brighter and males more crimson on breast. Twite is darker, rufous-buff unstriped throat, less white on tail, yellow bill ; males with crimson on rump, not head or breast. Redpolls lack white on tail and primaries and have black chins and yellowish bills.

FIELD-CHARACTERS.—Larger than Twite and Redpolls, dark brown bill, white margins of tail and white wing-bars especially noticeable in male ; in flight, head markedly grey in contrast with warm brown of general plumage. Like allies, gregarious from winter to spring, but more exclusive than some other Finches. Flocks, sometimes hundreds strong, roam country in search of seeds, gathered mainly on ground on stubble and waste-places. When alarmed and when changing ground flocks proceed with rapid undulating flight, and maintain incessant twitter. On sunny days they often babble in chorus from some tree-top. In breeding-season gorse-covered commons much affected, and male—then crimson on fore-head and breast—often sings—a warbling elaboration of the twitter—from top of some bush, and at times sallies into the air for a few feet, descending singing with fluttering wings and outspread tail. A soft “tew-ee” is uttered at times.

BREEDING - HABITS.—Prefers commons and thickets of gorse, bramble, and thorn-bushes, but also commonly in hedgerows and young plantations. Also locally in marram-grass on sandy coasts. Shows tendency to breed socially, but many nests are isolated. *Nest.*—Generally low down, only few feet from ground, and sometimes actually on it, built of stalks, bents, moss, and sometimes twigs ; lined hair, wool, and sometimes down or feathers. *Eggs.*—4-6, occasionally 7, pale bluish or bluish-white in ground-colour, with spots and occasional streaks of purplish-red. White and blue varieties without markings also occur. Size variable : average of 100 eggs, 18.12×13.10 mm. *Breeding-season.*—From mid-April onwards, and as two or three

broods are usually reared fresh eggs may be found until July. *Incubation*.—Lasts to 14th day; chiefly performed by hen, cock only relieving for short periods.

FOOD.—Mainly seeds of weeds, but also of flax, hemp, turnip, and rape, some insects, and according to Saunders, berries and oats in winter.

DISTRIBUTION.—*British Isles*.—Resident. Common and widely distributed, but uncommon and local in west Scotland and I. Hebrides; rare vagrant O. Hebrides and apparently so Shetlands; recorded several times Fair Isle and common nester and migrant Orkneys.

MIGRATIONS.—*British Isles*.—A proportion of our home-bred birds move south autumn, many crossing Channel, third week Sept. to end Oct., occasionally from Sept 1, and returning spring, third week March to mid-April. Large numbers of Continental immigrants arrive east coasts Great Britain autumn, mid-Sept. to end Oct., occasionally to third week Nov., and return spring, mid-March to third week April, extremes March 5 to May 8. Occasional records of passage-movements west coast Lights latter half of Sept. Frequently observed as immigrant on Irish coasts both spring and autumn, but movements not clearly worked out.

DISTRIBUTION.—*Abroad*.—Europe generally, except in the high north. Replaced by allied forms in Mediterranean countries and Atlantic isles, and in parts of west Asia.

Genus SERINUS Koch.

SERINUS Koch, Syst. d. baier, Zool., p. 228 (1816—Type *S. hortulanus* = *serinus*, monotypy and tautonymy).

Small. Bill very short and thick, as if swollen, culmen distinctly curved. Tail deeply emarginated. Wing fairly long and 2nd to 4th primaries about equal and longest. Plumage Siskin-like in coloration. Many species in Africa; one only in Europe, and two in Asia.

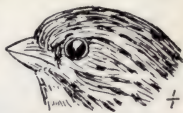
SERINUS CANARIUS

28. *Serinus canarius serinus* (L.)—THE SERIN.

FRINGILLA SERINUS Linnaeus, Syst. Nat., ed. XII, i, p. 320 (1766—"Habitat in Europa Australi." Based on Gesner, Aldrovandi, and Brisson. Restricted typical locality, Switzerland, where Gesner lived). *Serinus hortulanus* K. L. Koch, Yarrell, II, p. 111; Saunders, p. 177.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-part of crown, eye-stripe, and hind-neck yellow much concealed by long greyish-green

fringes; fore-head darker; nape more greenish, much streaked black-brown; mantle and scapulars yellowish-brown, broadly streaked black-brown; back yellow, streaked greenish-black; rump bright greenish-yellow; upper tail-coverts dark brown fringed green and tipped grey; lores whitish; ear-coverts greenish-brown, tinged grey; chin, throat, and centre of breast bright greenish-yellow; sides of breast and flanks pale buff, boldly streaked black-brown; under tail-coverts



Serin (*Serinus c. serinus*).

same but with few streaks; centre of belly uniform whitish-buff; axillaries white, fringed pale yellow; tail black-brown, tipped and fringed on inner webs whitish, on outer webs yellowish-green; wing-feathers same but inner secondaries with browner fringes and larger white tips; greater coverts with yellowish-buff tips; median same but tips more yellowish; lesser coverts with yellowish-green tips. This plumage is acquired by complete moult in autumn. *Summer*.—No moult. Abrasion makes all yellow parts much brighter, fore-part of crown becoming uniform yellow; mantle and flanks more markedly striated; green fringes wear off tail and wings and tips to wing-coverts become paler.

Adult female. Winter and summer.—Resembling male but much less yellow and more striated, crown and nape only tinged yellow, thickly streaked dark greenish-brown; mantle browner, less yellowish; rump paler; eye-stripe yellowish-white; throat and breast much paler yellow (sometimes greyish-white, only tinged yellow) and streaked dark brown.

Nestling.—(Not examined.)

Juvenile.—Upper-parts including upper tail-coverts brownish-buff, streaked dark brown; rump paler, streaked same; under-parts pale yellowish-buff closely streaked brown, chin and centre of belly uniform pale yellowish-buff; inner secondaries and all wing-coverts black-brown, fringed and tipped buff.

First winter and summer.—Apparently like adults. The juvenile body-feathers, wing-coverts, and inner secondaries are moulted in autumn but not other remiges or rectrices.

Measurements and structure.—♂ wing 66-74 mm., tail 42-49, tarsus 11-13, bill from skull 7-9 (14 measured). ♀ wing 64-71. Primaries: 1st minute and hidden, 3rd and 4th equal and longest, 2nd and 5th 1-3 mm. shorter, 6th 6-9 shorter; 3rd to 5th emarginated outer webs. Secondaries equal 10th primary, square tipped very slightly notched. Tail forked. Bill wide, thick and short. Short feathers directed forwards over nostrils and at gape.

Soft parts.—Bill dark horn, under mandible pale horn; legs and feet dark brown; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*Serinus c. germanicus* (Germany)

is duller and more greenish, *S. c. canarius* (Canary, Madeira, Azores) is considerably larger, much greyer, less brown on mantle, and deeper yellow on under-parts. Female Serin superficially resembles female Siskin, but is at once distinguished by its short thick beak.

FIELD-CHARACTERS.—Size and shape resembling Lesser Redpoll, but striped with the yellow and olive colours of a mule canary—cock bright, hen dull. When flying away both sexes may be recognized by light lemon-coloured longitudinal streak on lower back, surrounding parts having dark appearance. Flight rather swift and gliding, reminding of Sand-Martin, but this will be more appreciated in breeding-season. Song, a finch-like “babbling” of notes, but its harmony spoilt by the somewhat hissing tone that pervades it (H. Lynes).

BREEDING-HABITS.—*Nest.*—Generally neatly concealed and being small, difficult to see. In all kinds of trees and bushes, generally five to twenty feet from ground, sometimes at ends of smaller branches like Goldfinch’s, and sometimes in fork. Neatly built of stalks, lichen, and roots, woven together with spider-webs, and lined thickly with hair (not down) and occasionally a feather or two. *Eggs.*—Generally 4, sometimes 5 or only 3, and scarcely distinguishable from those of Citril, Siskin and Goldfinch, but generally rather smaller than Goldfinch’s; ground-colour pale bluish, spotted and streaked with purplish and red-brown, chiefly at big end. Average of 100 eggs 16.17×11.86 mm. *Breeding-season.*—From mid-April in south and May in central Europe, and beginning of March to July in north Africa: evidently two broods. *Incubation.*—Lasts about ten days and is performed by hen.

FOOD.—Seeds of various weeds and garden-plants.

DISTRIBUTION.—*British Isles.*—Rare vagrant. About twenty recorded England, ten being from Sussex coast, where also small flock said to have been seen; three Kent, four Norfolk, one or two near London, one each Hants., Somerset, and Devon, and one said to have been seen Yorks., and another Oxon. Two co. Dublin. Male near Edinburgh Nov. 9, 1911.

DISTRIBUTION.—*Abroad.*—North-west Africa and south Europe to France and Switzerland. The form inhabiting Germany has been separated as *S. c. germanicus* and birds from Holland and perhaps north France belong to this form, as may also those obtained in the British Isles. Represented on the Canaries and Madeira by *S. c. canarius*.

[NOTE.—“Wild” CANARIES, *Serinus canarius canarius* (L.) have been taken in Great Britain, but these were undoubtedly escaped birds, as in its home (Canary Islands, Azores, and Madeira) the Canary Serin does not migrate, and numbers are imported into our islands.]

Genus PYRRHULA Briss.

PYRRHULA Brisson, Orn. I, p. 36 (1760—Type by tautonymy "Pyrrhula," according to Briss., Orn. III, p. 308, i.e. the Bullfinch).

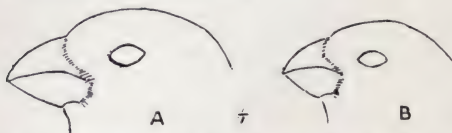
Easily recognizable by its short, roundish, thick bill. 2nd primary about equal to 6th, 3rd to 5th about equal and longest, though only a few mm. longer than 2nd and 6th, 3rd to 6th emarginated on distal half. Tail (in the European species) square, upper tail-coverts very long, beyond middle of tail. Tarsus short, not much longer than middle toe with claw. Sexes different in colour, young different from both adults, but more like female. Palearctic, but extending into Himalayas, Malay Peninsula, Formosa, and Philippines in the east.

PYRRHULA PYRRHULA

29. *Pyrrhula pyrrhula pyrrhula* (L.)—THE NORTHERN BULLFINCH.

LOXIA PYRRHULA Linnæus, Syst. Nat., ed. x, i, p. 171 (1758—Europe. Restricted typical locality: Sweden).

P. major, Saunders, p. 195 (in text).



A. Northern Bullfinch (*Pyrrhula p. pyrrhula*); B. British Bullfinch (*Pyrrhula p. pileata*).

DESCRIPTION.—*Adult male*.—Like *P. p. pileata* but larger and purer and paler blue-grey on upper-parts and brighter pink on under-parts, tips of outer greater wing-coverts generally whiter, not so buff.

Adult female.—Like *P. p. pileata* but larger and much greyer and paler on upper- and under-parts (the nape paler grey than even in male *pileata*); lesser and median coverts blue-grey, inner greater coverts tipped pale grey, and outer greyish-white.

Juvenile.—Like *P. p. pileata* except for larger size.

Measurements and structure.—♂ wing 90-98 mm., tail 63-70, tarsus 18-20, bill from feathers 9-10 mm. (12 measured). ♀ wing 87-92. Structure as *P. p. pileata*.

Soft parts.—As *P. p. pileata*.

CHARACTERS AND ALLIED FORMS.—Except for *P. p. kamtschatica* this is the largest and palest form.

FIELD-CHARACTERS.—Even at a little distance distinctly larger and "cleaner" looking than British Bullfinch. Call-note louder (H.F.W.).

BREEDING-HABITS.—Haunts forests, frequently nesting in conifers. Nest similar to that of British Bullfinch but slightly larger, and in Scandinavia often lined with hairy lichen (*Usnea barbata*). *Eggs.*—Usually 5 or 6, occasionally only 4, clear greenish-blue in ground-colour when fresh, with few spots and streaks of very dark purplish-brown. Average of 65 eggs, 20.42×14.69 mm. *Breeding-season.*—From May to July in Scandinavia; in June in Finland; probably two broods in former country at any rate. *Incubation.*—Lasts a fortnight, and is performed by hen alone (Naumann).

FOOD.—Mainly seeds of trees (alder, birch, and conifers), also kernels of berries, plant seeds and buds.

DISTRIBUTION.—*Great Britain.*—Irregular autumn- and winter-visitor. As it is imported as cage-bird, some records may be due to “escapes,” but following are probably genuine: *England.*—Two Yorks. Nov., 1894, and possibly immigrations noted under “*Pyrrhula europæa*” Nov., 1880, Oct. and Nov., 1884, 1886, 1887, and other years (*Birds Yorks.*, I, pp. 194 and 195), one Yorks. coast Dec. 3, 1910. One Yarmouth (Norfolk) Jan. 22, 1893. *Scotland.*—One near Longniddry (Haddington) Oct., 1884. Considerable immigration Shetlands Nov., 1905, and some birds March and April, 1905, Oct., 1906, and one Nov., 1902, probably of this form. One or more Fair Isle, Nov., 1905, and a few Nov., 1906, and a good many Isle of May, Fair Isle, and Shetlands, as well as south-east Scotland, Oct., Nov., and Dec., 1910. One Shetland, Oct., 1911, one Fair Isle, Oct., 1912, and a few Nov., 1913, one Orkney, Oct., 1912, and probably a pair Nov., 1913. One Fair Isle, March 27, and one April 30, 1913, appear to be the only spring records. Others recorded as “Bullfinches” in Shetlands probably of this form.

DISTRIBUTION.—*Abroad.*—Scandinavia, Russia, north-east parts of Germany, and west Siberia, also apparently Hungary and Transylvania. In winter spreading southwards and westwards, as far as west and south Europe. Represented by a form (*P. p. europæa**) much more nearly allied to *P. p. pileata* in west and central Europe generally, and by other forms in the Azores, Caucasus, and temperate Asia.

30. *Pyrrhula pyrrhula pileata* MacGillivray—THE BRITISH BULLFINCH.

PYRRHULA PILEATA MacGillivray, Hist. Brit. Birds, I, p. 407 (1837—Great Britain).

Pyrrhula pyrrhula pileata MacGillivray, Hartert, Brit. B., II, p. 130.

Pyrrhula europæa Vieillot, Yarrell, II, p. 166; Saunders, p. 195.

* No examples of this form have as yet been detected in the British Isles.

DESCRIPTION.—*Adult male.* *Winter.*—Fore-head, crown, nape, lores, and chin glossy blue-black; back of neck blue-grey; mantle, scapulars, and back same but slightly tinged yellowish-brown and sometimes marked pink; rump white; upper tail-coverts glossy blue-black; ear-coverts, sides of neck, throat, breast, and flanks varying rosy-pink to pinkish-red; lower-belly, vent, under tail-coverts, and axillaries white; tail black, central pair and outer webs of rest glossy; primaries greyish-black, fringed black on outer, and greyish-white on inner webs; secondaries same but outer webs fringed glossy blue-black, two inner secondaries all glossy blue-black and innermost with outer web grey usually marked pinkish-red; primary-coverts greyish-black; lesser and median coverts blue-grey; greater coverts glossy blue-black, inner ones tipped pale blue-grey, outer buffish-white. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—No moult, and very little change by abrasion except that mantle becomes purer blue-grey.

Adult female. *Winter.*—Head as male but less bluish; back of neck brownish-grey; mantle, scapulars, and back dark yellowish-brown, tinged grey; upper tail-coverts glossy blue-black; rump, vent, under tail-coverts and axillaries white; ear-coverts, sides of neck, and under-parts pinkish-brown to buffish-brown; tail as male (often with dull white streak along shaft of outer feathers); wings as male but lesser and median coverts darker, tips of greater coverts more buff less grey, and pink on innermost secondary not so bright and extensive. *Summer.*—No moult. When much abraded mantle and back become greyer, less brown, and under-parts become paler.

Nestling.—Down, blackish-grey, abundant and long; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside violet-red, no spots, flanges whitish (C. B. Ticehuist, *Brit. B.*, II, 193).

Juvenile. Male and female.—Resembling adult female but head brown like mantle, which is darker than in adult female; rump white, tinged buff; lores and chin yellow-brown and whole of under-parts same and more yellowish than adult female; vent and under tail-coverts pale buff; axillaries white; wing-feathers as adult but innermost secondary marked brown not pink; lesser wing-coverts as mantle; median tipped brown; greater tipped deep buff.

First winter and summer.—Like adults. The juvenile body-feathers, wing-coverts, and innermost secondaries are moulted in Aug. to Oct. but not remiges, primary-coverts, or rectrices.

Measurements and structure.—♂ wing 78-84 mm., tail 56-62, tarsus 15-17, bill from feathers 8-9 (14 measured). ♀ wing 78-83. Primaries: 1st minute and hidden, 3rd, 4th, and 5th about equal and longest, 2nd about 4 mm. shorter, 6th about equal to or a

little longer or shorter than second; 3rd to 6th emarginated outer webs. Secondaries equal 10th primary, tips rounded. Tail almost square very slightly forked. Bill short, very wide and thick with sharp, slightly overlapping point. Small gape-bristles.

Soft parts.—Bill black, brownish at base of lower mandible; legs and feet brown; iris brown.

CHARACTERS AND ALLIED FORMS.—Male of *P. p. europæa* cannot be distinguished from male of this form but female is greyer, not so brown on mantle and back, and rather paler more greyish on breast than female of *P. p. pileata*. For differences of *P. p. pyrrhula* see under that form. *P. p. kamtschatica* (Kamtschatka) and *P. p. caspica* (Caspian) differ in size and shade of colour, but in *P. p. murina* (Azores) male is like female, and male of *P. p. cassini* (east Siberia) is pale grey on under-parts, while that of *P. p. griseiventris* (north China, Japan) has only throat and cheeks pink.

FIELD-CHARACTERS.—Unmistakeable in the open, but, except in early spring when feeding on fruit-buds, it seldom leaves cover of thickets and dense hedge-rows. Rump pure white, contrasted with grey upper-parts, and black wings, tail, and head, betray it as it takes short flights along hedge-row. Its presence often first revealed by call-note, a soft, low, piping "whib."

BREEDING-HABITS.—Breeds in gardens, thick hedges, clumps of evergreens (especially box), also yews, and in plantations. *Nest*.—Usually about four to seven feet from ground, built of fine twigs and some moss or lichens, lined with thick layer of interlacing fine black roots. Sometimes extremely slightly, at others very stoutly, constructed. *Eggs*.—Usually 4-5, occasionally 6 or even 7; clear green-blue with few spots and a streak or two of extremely dark purple-brown, generally tending to form zone at big end. Varieties with reddish markings on white ground occur. Average of 83 eggs, 19.58×14.46 mm. *Breeding-season*.—Exceptionally eggs latter part April, but generally during May, and second brood a month later. *Incubation*.—Lasts 13-14 days, and is performed chiefly by hen, cock taking some part daily. *Fledging-period*.—2-3 weeks.

FOOD.—Chiefly buds, seeds, and kernels of berries. Insects to some extent in spring, but bulk of food vegetable, and damage is done to fruit-trees in early spring.

DISTRIBUTION.—Confined to British Isles.—*British Isles*.—Resident. Generally distributed, but rather local in Scotland. Recently spread to some I. Hebrides, and recorded from Harris and North Uist (O. Hebrides). Its recorded visits to Orkneys and Shetlands may be referable to *P. p. pyrrhula* (see p. 75).

Genus **CARPODACUS** Kaup.

CARPODACUS Kaup, Skizz. Entw.-Gesch. und Natürl. System, p. 161 (1829—Type by designation of Gray, 1855, *Carpodacus erythrinus*).

Bill thick and short, but longer than in *Pyrrhula*, height about equal to length of upper mandible from nostril to tip. Culmen moderately curved. Wings rather long, first three visible primaries longest. Tail (in the European species) emarginate. Plumage not very soft and rich but somewhat hard, as in *Passer*. Sexes different. East Europe to Kamtschatka and North America, south to Himalayas, only one in Europe.

CARPODACUS ERYTHRINUS31. *Carpodacus erythrinus erythrinus* (Pall.)—**THE SCARLET GROSBEAK.**

LOXIA ERYTHRINA Pallas, Nov. Comm. Acad. Sci. St. Petersburg., xiv, p. 587, pl. 23, fig. 1 (1770—S. Russia and Siberia. Restricted typical locality: Volga).

Pyrrhula erythrina (Pallas), Yarrell, II, p. 172; Saunders, p. 197.



Scarlet Grosbeak (*Carpodacus e. erythrinus*). ♀ autumn.

DESCRIPTION.—*Adult male.* *Winter.*—Crown, nape, and rump rosy-carmine, usually with some brown of centre of feathers showing; mantle, scapulars, back, and upper tail-coverts brown, tinged varying amount of carmine; lores brown; ear-coverts brown, more or less tinged pink; chin, throat, and upper-breast

bright rosy-carmine; rest of breast and sides of belly whitish, tinged varying amount of pink; centre of belly, vent, and under tail-coverts white; flanks tinged pale buff with faint dark streaks; axillaries pale buff, tinged pink; tail- and wing-feathers dark brown, fringed on outer webs pink or pinkish-buff; greater and median coverts dark brown tipped pink and pinkish buff, forming not very conspicuous double wing-bar; lesser wing-coverts dark-brown fringed and tipped carmine. This plumage is acquired by complete moult in autumn. *Summer*.—No moult. Abrasion makes carmine deeper and considerably more brilliant, but mantle becomes browner owing to wearing off of carmine tips, and pale tips of wing-coverts become much reduced.

Adult female. Winter.—Crown, mantle, and scapulars yellowish-brown with dark brown centre of feathers showing; rump more uniform and greenish; upper tail-coverts brown; ear-coverts and sides of neck uniform brown; throat and breast pale buff, streaked brown; chin paler and often without streaks; flanks darker and lightly streaked; belly and under tail-coverts buffish-white; tail- and wing-feathers dark brown, outer webs fringed greenish; innermost secondaries with wider and more buff fringes to outer webs; greater and median coverts dark brown, tipped buff, greenish-buff, or whitish-buff, forming conspicuous double wing-bar; lesser coverts tipped greenish. *Summer*.—Abrasion makes mantle and crown browner, rump greyer and under-parts more greyish-white, less buff.

Nestling.—(Not examined.)

Juvenile. Male and female.—Much as adult female but upper-parts darker and browner, dark streaks larger and more prominent; rump streaked; throat, breast, and flanks much more heavily streaked; tips of wing-coverts rather more yellowish-buff.

First winter and summer. Male.—Like adult female and not distinguishable from it. The juvenile body-feathers and median and lesser wing-coverts are moulted in autumn, but not remiges or rectrices. *Female*.—Scarcely distinguishable from adult, but usually more streaked on flanks and lower-breast.

Second winter and summer. Male.—Carmine not so brilliant as in adult, mantle mostly brown, tips of greater wing-coverts paler pink; tips of median coverts whitish, tinged pink; breast and belly with less pink and more buffish, not so white as in adult; wing- and tail-feathers less pink on outer webs. Often brown feathers amongst pink of throat and breast. Occasionally like first winter except for pink edges to wings and tail and pink lesser coverts.

Measurements and structure.—♂ wing 80-86 mm., tail 54-59, tarsus 17-20, bill from feathers 9.5-11 (12 measured). ♀ wing 79-83. Primaries: 1st minute and hidden, 2nd to 4th about equal and longest, 5th 3-4 mm. shorter, 6th 10-12 shorter; 3rd to 5th emarginated outer webs. Tips of secondaries fairly square, longest

about equal 9th primary. Tail fairly forked. Bill much like Bullfinch's but rather finer. Minute bristle-like feathers covering nostrils and at gape.

Soft parts.—Bill brown, slightly paler base lower mandible; legs and feet dusky-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*C. e. roseatus* (Himalayas) is exceedingly brilliant, *C. e. grebnitskii* (east Siberia) rather more rosy, less carmine throat, but doubtfully distinct from typical form. Bullfinch-like bill and brilliant carmine throat, crown, and rump of adult male, streaked throat and whitish double wing-bar of young and female are specific characters.

FIELD-CHARACTERS.—Female and young males are somewhat like Corn-Buntings in general coloration but are much more slim. Double whitish wing-bar and streaked throat and breast are distinctive (H.F.W.).

BREEDING-HABITS.—Breeds generally in swampy woods near rivers, placing its flimsy nest in thick undergrowth. *Nest.*—More like Warbler's than Finch's, built of dead stalks and grasses, lined roots and sometimes few hairs. *Eggs.*—Usually 5, sometimes 4 or 6; very distinctive, being very deep and vivid blue in ground-colour with few bold spots and streaks of deep chocolate-black and generally few ashy shell-marks at big end. Average of 86 eggs 20.05×14.29 mm. *Breeding-season.*—Begins early June in east Prussia, but eggs may be found up to July. In mid-Russia from end May. *Incubation-period.*—Not precisely known; apparently performed by hen only. Probably only one brood normally reared.

FOOD.—Entirely vegetable-matter (though young also eat insects and larvæ), seeds of reeds, trees, and bushes, as well as buds.

DISTRIBUTION.—*England and Wales.* Five obtained, several seen. Female near Brighton (Sussex) Sept., 1869. Female Hampstead (Middlesex) Oct. 5, 1870. Female near Yarmouth (Norfolk) Sept. 3, 1892 (Saunders, pp. 197, 199, 756). Male near Painscastle (Radnor) about 1875 (*Zool.*, 1904, p. 228). Female Holy Island (Northumberland) Aug. 30, and another seen Sept. 15, 1913. One seen Oxon. Jan. 31, 1912, and another Hants. Aug. 13, 1913 (*cf. Brit. B.*, vi, p. 283; vii, pp. 168-179). *Scotland.*—Irregular autumn-visitor of recent years (very few adult males), unrecorded previous to 1906. Fair Isle (Shetlands) one Oct. 3, 1906, one Sept. 4, one Sept. 29, and probably another autumn, 1908, one Sept. 20, one Sept. 28, 1912, several Aug. 29 to Sept. 18, 1913. Isle of May, one Sept. 25, 1907, one Sept. 12, 1908, one Sept. 13, 1909, one Sept. 7, 1910, one Sept. 20 and 21, 1913. St. Kilda (O. Hebrides), two Sept. 8, one Sept. 19, 1910. Tarbatness (Ross-shire), one Sept. 8, 1912. Aukerry (Orkneys), nine Aug. 31 to Sept. 30, 1913.

DISTRIBUTION.—*Abroad.*—North-east Germany, Russia, Siberia, eastwards at least to the Lena River, and replaced by allied races in central Asia and Kamtschatka. Migrant, but its regular winter-quarters appear to be as yet uncertain; during migration or in winter occasionally in west Europe and Mediterranean countries.

Genus PINICOLA Vieill.

PINICOLA Vieillot, Ois. Amer. Sept., i, p. iv (1807—Type by monotypy *Pinicola rubra* Vieill. = *enucleator* L.).

Large arboreal Finches; sexes different; young like female. Larger than *Carpodacus*; bill more curved; plumage softer, longer, and more plentiful. First four visible primaries about equal and longest, 2nd (first visible) a little shorter than next but distinctly longer than 6th. Otherwise like *Carpodacus*. One species in several subspecies; northern parts of Old and New Worlds, in the latter south to California.

PINICOLA ENUCLEATOR

32. *Pinicola enucleator enucleator* (L.) — THE PINE-GROSBEAK.

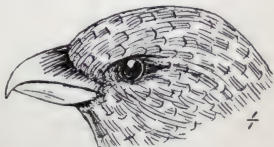
LOXIA ENUCLEATOR Linnæus, Syst. Nat., ed. x, i, p. 171 (1758—North of Sweden and North America. The American form, however, differs. Restricted typical locality: Sweden).

Pyrrhula enucleator (Linnæus), Yarrell, II, p. 177; Saunders, p. 199.



Pine-Grosbeak (*Pinicola e. enucleator*).

DESCRIPTION.—*Adult male. Winter.*—Crown, nape, and rump rosy-pink or crimson to yellowish-scarlet; mantle same, but with more of brown centres of feathers showing; scapulars and back french-grey, tipped pink; upper tail-coverts greyish-brown tinged pink and tipped pink or greyish-white; sides of neck, ear-coverts, throat, breast, and sides of belly extending on to flanks, as crown; chin and



Pine-Grosbeak (*Pinicola e. enucleator*).

lores greyish-white ; round eyes black-brown ; centre of belly, flanks, and axillaries smoke-grey ; under tail-coverts rather browner with white tips ; tail dark brown, outer webs narrowly fringed pinkish at base and whitish at tips ; primaries same ; secondaries same but with whiter fringes and inner ones with broad white fringes and tips ; primary-coverts like primaries ; greater coverts like inner secondaries but with white more tinged pink ; median coverts dark brown with pinkish-white tips ; lesser coverts grey-brown, tipped pink. This plumage is acquired by complete moult in autumn. *Summer*.—No moult. Abrasion makes crimson brighter as in Crossbills and fringes gradually wear off tail and primaries but white edgings and tips of inner secondaries and wing-coverts though becoming reduced in size are always conspicuous.

Adult female. Winter.—Resembling male but crimson replaced by golden-yellow or reddish-gold ; mantle, back, and rump greyish-brown with rather narrow gold fringes and tips. *Summer*.—Abrasion gradually reduces amount of golden colouring owing to tips of feathers wearing off ; mantle becomes almost uniform greyish-brown and rump and back greyer ; wings and tail with scarcely a trace of gold edgings.

Nestling.—(Not examined.)

Juvenile.—Upper-parts dark sepia, with feathers of crown and rump tipped dull yellowish ; throat and breast paler and more yellowish-brown ; belly and under tail-coverts ashy-brown with buffish tinge ; tail-feathers dark brown, narrowly edged whitish-buff ; primaries same ; secondaries with wider and whiter fringes ; greater coverts fringed and tipped whitish-buff ; median and lesser coverts tipped yellowish-buff. N.B.—Tips of wing-coverts are considerably smaller and duller than in adult.

First winter and summer. Male.—Much like adult female but usually more pinkish, less yellow-gold, tail- and wing-feathers and wing-coverts browner and not so blackish and the edgings and tips duller, not so pure white. *Female*.—Like above but yellow paler. The juvenile body-feathers and wing-coverts are moulted in autumn (August) but not the primary-coverts, remiges, or rectrices.

Soft parts.—Bill dark horn-brown, paler base lower mandible ; legs, feet, and iris dark brown.

Measurements and structure.—♂ wing 107-114, tail 77-87, tarsus 20-23, bill from feathers 14-15 (10 measured). ♀ wing 105-110. Primaries : 1st minute and hidden, 3rd longest, 4th often equal, sometimes 1 mm. shorter, 5th and 2nd 1-5 shorter, 6th 7-12 shorter ; 3rd to 6th emarginated outer webs. Secondaries between 9th and 10th primaries, tips slightly rounded. Tail fairly forked. Bill heavy, upper mandible curved and projecting beyond under mandible. Small bristle-like feathers cover nostrils and at gape.

CHARACTERS AND ALLIED FORMS.—*P. e. kamtschatkensis* (Kamtschatka and east Siberia) has shorter and thicker bill, while five different forms are recognized in North America. Large size, conspicuous white edgings to secondaries and wing-coverts, and grey belly are specific characters.

BREEDING-HABITS.—Haunts coniferous woods and in some districts also birch-forest in subarctic regions of the Old World, and nests at no great height on lateral branches, near trunk. *Nest*.—Recalls Bullfinch's on larger scale, built of interlaced twigs, generally birch, lined fine roots or wiry grasses. *Eggs*.—4, sometimes 3 only, 5 once recorded; deep greenish-blue, blotched and spotted boldly blackish or brownish-purple. Average of 100 eggs, 26.03×17.72 mm. *Breeding-season*.—From end May onward, usually first half June. *Incubation*.—Lasts 14 days (noted in confinement); by hen alone. One brood.

FOOD.—Chiefly berries, catkins of birch, seeds and buds; insects also said to be taken.

DISTRIBUTION.—*British Isles*.—Rare vagrant. Some fifty recorded, but most are not authenticated. Of recent years the following records: One Notts., Oct. 30, 1890 (Saunders, p. 199); small flock Kent and Sussex, Oct., 1905; two Kent, March 4, 1909; two Sussex, Jan. 20, 1914; (*cf. Brit. B.*, I, p. 247, VII, p. 292; *Hist. Birds Kent*, p. 165).

DISTRIBUTION.—*Abroad*.—Scandinavia and north Russia, north Siberia. In winter spreading more or less regularly southwards and westwards, occasionally as far as Italy and south France. Represented by closely-allied forms in Kamtschatka and North America.

Genus LOXIA L.

LOXIA Linnæus, Syst. Nat., ed. x, i, p. 171 (1758—Type by subsequent designation—Gray 1840—*L. curvirostra*; according to Opinion 16 Intern. Comm. Nomencl. also by tautonymy).

Adult birds alone among all other British birds with mandibles crossing at tip, lower mandible being turned to left or right; when bird is hatched mandibles are perfectly parallel, but at early age begin to cross. Bill compressed. Nostrils covered. Wings long and pointed, three first visible primaries almost equal and longest. Tail deeply emarginate, short but longer than half wing. Tarsus shorter than middle toe with claw. Sexes different in colour, young striped. Palearctic and Nearctic faunal regions, in Old World south to Philippines, in America south to Guatemala. Three species, with a number of subspecies, in Europe.

Key to species of genus LOXIA.

- 1 { Wings with two white bars *L. leucoptera*, p. 89
 { Wings without distinct white bars 2
- 2 { Larger, bill stouter. Width of lower mandible at base
 equal to or more than length of gonys *L. pytyopsittacus*, p. 88
 { Smaller, bill slenderer. Width of lower mandible at
 base less than length of gonys *L. curvirostra*, p. 84

LOXIA CURVIROSTRA

33. *Loxia curvirostra curvirostra* L. — THE COMMON CROSSBILL.

LOXIA CURVIROSTRA Linnæus, Syst. Nat., ed. x, i, p. 171 (1758—Europe. Restricted typical locality: Sweden).

Loxia curvirostra anglica Hartert, Vög. pal. Fauna, I, p. 119; *id.*, Brit. B., I, p. 209; *cf. id. op. c.*, III, p. 194.

Loxia curvirostra Linnæus, Yarrell, II, p. 187 (part); Saunders, p. 201 (part).

DESCRIPTION (Plate 4).—*Adult male. Winter.*—Crown bright pink to scarlet-pink with dark brown centres of feathers showing here and there; back of neck, mantle, and scapulars not so bright and with more dark brown showing, especially on scapulars; back and rump brighter and more uniform than crown and with no brown; upper tail-coverts dark brown, tinged pink; lores and round eyes black-brown with buffish tips; ear-coverts as crown but upper portions generally more brown; throat, breast, and flanks as rump but not quite so bright; centre of belly dull greyish-white; lower flanks and under tail-coverts same but streaked dark brown and usually tinged pink; axillaries greyish-white, fringed pink; tail-feathers, primaries, and secondaries black-brown with very narrow pinkish fringes on outer webs; primary-, greater, and median coverts same; lesser coverts dark brown with pink tips. **N.B.**—Adult males frequently have a few golden or greenish-yellow feathers on upper- and under-parts. This plumage is acquired by complete moult from July to Nov. *Summer.*—No moult; abrasion makes crimson more brilliant. As in Linnets, Redpolls, and Grosbeaks, the rami only are pink and the radii grey, and the wearing-off of latter (especially on distal portions of rami) causes pink rami to become massed together, thus giving more brilliant effect. Also, as in birds mentioned, crimson becomes gold or yellow after moulting in captivity. There is much individual variation in brilliancy both in summer and winter.

Adult female. Winter.—Crown yellowish-green mottled brown, feathers being dark brown tipped yellowish-green and often on fore-head with small ashy-grey tips; nape and back of neck streaked dark brown and ashy-grey, occasionally tinged green;



(HALF NATURAL SIZE.)

Common Crossbill (*Loxia c. curvirostra*) Male, female and juveniles.

[Face p. 84.]

mantle like crown but rather browner; back and rump bright and nearly uniform yellowish-green; upper tail-coverts dark brown, tinged green; ear-coverts, cheeks, and sides of neck ashy-brown, slightly tinged green; chin and throat ashy-grey, streaked dark brown and tinged yellowish-green; breast and flanks yellowish-green with ashy-brown centres of feathers showing; centre of belly greyish-white; under tail-coverts same, with large dark brown centres; axillaries smoke-grey, faintly tinged yellowish; tail and wings as in male but with fringes greenish. *Summer*.—No moult, and very little change by abrasion, but yellowish-green becomes slightly brighter on rump though it tends to become worn off on crown. N.B.—Some specimens are more golden, less greenish-yellow, and some have a considerable number of feathers tipped dull pink on upper- and under-parts.

Nestling.—Down, very dark grey; distribution, inner and outer supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside partly violet-pink, partly yellow; no tongue-spots; externally, flanges pale yellow (C. B. Ticehurst, *Brit. B.*, iv, p. 71).

Juvenile. Male.—Crown, nape, upper-mantle, ear-coverts and sides of neck brown-black, streaked whitish, feathers being edged whitish (a few feathers of crown usually have dull green edgings); rest of mantle, scapulars, and back same, but feathers edged brownish-green; rump like crown but more yellowish; upper tail-coverts brown-black, tipped brownish-green; whole of under-parts dull whitish-grey, heavily streaked brown-black, centre of belly with fewer streaks, flanks more brownish and with very broad streaks, some feathers on side of throat and an ill-defined band at base of throat with yellowish-green edges; tail as in adult female; primaries and secondaries as in adult female, with greenish fringes, but inner secondaries tipped dull buff; all wing-coverts tipped dull buff. *Female*.—Like juvenile male but browner and less green on upper-parts, especially mantle, and with no greenish-yellow feathers on throat and breast. N.B.—The juvenile is paler, especially on under-parts, when first leaving nest, but afterwards becomes duller.

First winter and summer. Male.—Varies from greenish-gold to orange and crimson and a mixture of these colours. Frequently a varying number of striped juvenile-feathers remain, especially on breast and belly. Wing- and tail-feathers are fringed greenish instead of pinkish as in adult, and wing-coverts have buff tips, but these distinctions become almost lost by abrasion during summer. Most of the juvenile body-feathers are moulted from May to Oct. but not remiges, rectrices, primary-coverts, and most greater and median coverts. N.B.—In this plumage there is great individual variation, ranging from a bird indistinguishable from adult male except for wings and tail, to one resembling a very bright yellow female. *Female*.—Like adult female

except for buff tips to wing-coverts and sometimes a few striped juvenile-feathers.

Measurements and structure.—♂ wing 95-100 mm., tail 54-60, tarsus 15-18, bill depth at base 10.5-12, length of upper mandible from feathers 16.5-20 (20 measured). ♀ wing 91-98. Primaries : 1st minute and hidden, 2nd and 3rd longest and about equal, 4th 2 mm. shorter, 5th 7 shorter, 6th 17 shorter; 3rd to 5th emarginated outer webs. Longest secondaries between 8th and 9th primaries. Tail deeply forked. Small, bristle-like feathers cover nostrils and at gape. Bill massive, mandibles at tips crossed and much curved, lower mandible upwards and upper downwards, sharply pointed and with scissor-like cutting-edges. Upper mandible longer than under. Crossing may be in either direction. In nestlings and for a week or two after leaving nest, mandibles are not crossed, upper being hooked and slightly longer than lower.

Soft parts.—Bill, legs, feet, and iris dark brown, with a yellowish mark along cutting-edges of mandibles. Nestling's bill before it is crossed is pale yellowish towards tip.

CHARACTERS AND ALLIED FORMS.—For differences of *L. c. scotica*, see under that form; other forms differ chiefly in size and shape of bill, and in general measurements, but little in coloration.

FIELD-CHARACTERS.—Being usually possible, owing to its tameness, to examine it at close quarters, crossed mandibles, varying plumages due to age and sex, and its Parrot-like postures are easily recognisable. Cannot be satisfactorily distinguished in field from Scottish or Parrot-Crossbill, but absence of double white wing-bars separates it at all ages from Two-barred Crossbill. Flight rapid and undulating. Call-note a loud incisive "gyp, gyp," uttered on wing as well as from perch. Conifers are largely resorted to for sake of their seeds, and the birds, which are very gregarious, often keep up a subdued chatter, inaudible at any distance, whilst feeding. Song, a low warble; has been likened to that of Starling.

BREEDING-HABITS.—Haunts coniferous woods, frequently nesting in clumps or belts of Scots firs, not as a rule in thickest part, but by preference on outskirts of forest. Nests at varying heights, sometimes not more than 6 ft. from ground. *Nest.*—Characteristic: strong foundation of fir-twigs, with superstructure of grasses, wool, etc., lined grass, rabbit's fur, hair, feathers, etc.; somewhat flattened in shape. *Eggs.*—Usually 4, sometimes 3 only, rarely 5. Ground greenish-white (sometimes faint reddish flush) with few bold spots and streaks of purple-red, sometimes blackish, generally at big end; in some cases markings faint. Average of 25 Norfolk eggs 22.32×16.06 mm. *Breeding-season.*—Irregular: some laying Jan. and Feb., mostly March and early April; sometimes also June and July. *Incubation.*—Lasts 12 days; apparently performed by hen only. Sometimes double brooded.

FOOD.—Normally seeds of cones of Scots fir and other conifers, but also apple-pips, rowan berries, buds, aphides, caterpillars, etc.

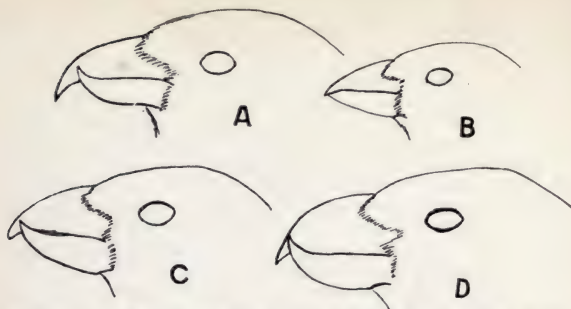
DISTRIBUTION.—*England and Wales*.—Late summer-immigrant arriving mid-June to August. Regular in some districts, but irregular in most, and especially so in north-west and south-west England and in Wales. Periodically (every three to ten years) arrives in great numbers and becomes much more generally distributed and frequently stays over following spring and into summer. Most nesting-records in springs immediately following “irruptions.” Has nested in following counties; dates within square brackets refer to probable but not positive records:—Devon, 1839, 1894. Somerset, 1910. Hants., 1839, 1858, 1877, 1892, 1910, 1912-14. Berks., 1882, 1889 [1898], 1899, 1910. Sussex, 1791, 1840, 1910. Surrey [1899], 1910. Kent [1833], [1839], [1894], 1910, 1911. Herts., 1907. Bucks., 1910. Gloucester, 1839, 1910. Oxon. [1839]. Leicester, 1839. Staffs., 1910. Hereford [1895]. Salop, 1880, [1895], [1896], 1898, 1913. Northants., 1892, 1904. Beds. [1899], 1910, 1913. Essex, 1910. Suffolk, 1815, 1822, 1885, 1889, 1910-14. Norfolk, 1829, 1887, 1889, 1890, 1910-13. Lines. [1910]. Yorks., 1829, 1840, [1855], 1872, 1876, 1902. Durham, 1838, 1856. Cumberland, 1839, 1856, [1865]. Northumberland [1821], 1838, 1869, 1889. Cheviot Hills, 1898. Carnarvon, 1890 or 1891. Montgomery, 1880. Merioneth [1897]. *Scotland*.—Late summer-immigrant as in England, but apparently not so regular; subject to similar irruptions, appearing in numbers even in far northern and western isles. Breeds sporadically and rarely in south Scotland, and possibly also in territory of *Loxia c. scotica*, but proof so far wanting. Has nested Ayr, 1864, [1884]. Dumfries [1838-9], 1888. Kincardine, 1903. Linlithgow, 1839. Stirling, 1839. *Ireland*.—Now resident but not indigenous. Apparently only migrates to Ireland in years of “irruptions.” Following irruption of 1838 bred Tipperary and has since; in 1867 Kildare; since 1868 has settled Fermanagh; since 1881 King’s; between 1883 and 1895 Westmeath. Following irruption of 1887-8, increased and bred more widely, and is now established (with fluctuations) in plantations of conifers in each province.

DISTRIBUTION.—*Abroad*.—Europe generally and north Asia, but represented by closely-allied forms in Spain, the Balearic Isles, north-west Africa, Cyprus, Caucasus, Crimea, central Asia and Himalayas to Japan and North America. More or less nomadic, in certain years migratory and spreading in great numbers westwards and southwards.

34. *Loxia curvirostra scotica* Hart. — THE SCOTTISH CROSSBILL.

LOXIA CURVIROSTRA SCOTICA Hartert, Vög. pal. Fauna, I, p. 120 (1904—Scotland), *id.*, Brit. B., I, p. 211.

Loxia curvirostra Linnæus, Yarrell, II, p. 187 (part); Saunders, p. 201 (part).



A. Common Crossbill (*Loxia c. curvirostra*) adult. B. Nestling. C. Scottish Crossbill (*L. c. scotica*). D. Parrot-Crossbill (*L. pytyopsittacus*).

DESCRIPTION.—Like *Loxia c. curvirostra* but with more massive, deeper, and usually blunter bill, especially in male, but this difference noticeable even in juvenile. Average wing-measurement also larger. Intermediate between *L. c. curvirostra* and *L. pytyopsittacus*, and if it should be proved that *L. c. curvirostra* also breeds in the Highlands this bird should be considered as a form of *L. pytyopsittacus*.

Measurements.—♂ wing 96-103 mm., tail 55-62, tarsus 17-19, bill depth at base 12-14, length of upper mandible from feathers 17-19 (10 measured). ♀ wing 94-98. Tips of mandibles and especially upper one are thicker and blunter, and not so elongated as in typical form.

BREEDING-HABITS.—Similar to those of Common Crossbill, but perhaps more frequently nesting in larches. Eggs also similar in character, 7 eggs once recorded. Average of 100 eggs, 21.24×15.91 mm. Breeding-season.—From Feb. to April, and sometimes again in June; most eggs found early in March.

DISTRIBUTION.—Confined to Scotland.—Resident in north Scotland, breeding from south-east Sutherland, throughout Moray Basin south to Dunkeld (Perth), west to Loch Maree (west Ross), and east to Huntley (Banff). Has occurred sporadically in winter in very small numbers in Dumfries, Kirkcudbright, and Fife, but apparently not a regular migrant from data available.

LOXIA PYTYOPSITTACUS

35. *Loxia pytyopsittacus* Borkh.—THE PARROT-CROSSBILL.

LOXIA PYTYOPSITTACUS Borkhausen, Rheinisches Magazin, I, p. 139 (1793)—Substituted typical locality: Sweden; cf. Hartert, Vög. pal. Fauna, I, p. 122).

Loxia pytyopsittacus Bechstein, Yarrell, II, p. 207; Saunders, p. 202 (in text).

DESCRIPTION.—Like *Loxia c. scotica* but still larger, wing being longer and bill deeper, broader, and longer.

Measurements.—♂ wing 98-110 mm., tail 57-66, tarsus 18-19, bill depth at base 14-15.5, length of upper mandible from feathers 19-21 (13 measured). ♀ wing 99-106.

BREEDING-HABITS.—Haunts pine-forests, generally apart from Common Crossbill, and much less numerous. *Nest*.—Similar in character, rather more substantial, of grasses, pine-needles, and mosses on foundation of twigs, and warmly lined grasses, bark-strips, lichens, feathers, etc. *Eggs*.—3-4, rarely 5, larger on average than Common Crossbill's, with generally bolder and blacker markings, otherwise very similar. Average of 100 eggs, 22.31×16.5 mm. *Breeding-season*.—Variable, eggs found from Dec. to June. In Scandinavia generally March or April. *Incubation*.—Stated as 14-15 days, but confirmation required. Probably sometimes double-brooded.

FOOD.—Chiefly seeds of various species of pine.

DISTRIBUTION.—*British Isles*.—Rare vagrant. A good many recorded, but some at least (especially from Scotland) may be referable to *L. c. scotica*. The following examined by us are of this species: near Plumstead (Kent) Jan., 1868; Southgate (Middlesex) Nov., 1864.

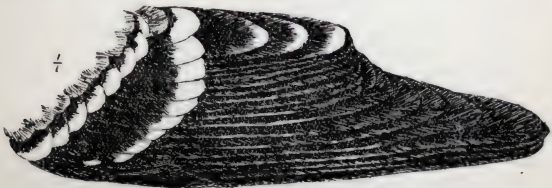
DISTRIBUTION.—*Abroad*.—North Europe (Scandinavia and north Russia to Poland). Like other Crossbills, somewhat nomadic, and known to have nested in Germany and probably also in other parts of central Europe.

LOXIA LEUCOPTERA

36. *Loxia leucoptera bifasciata* (Brehm)—THE TWO-BARRED CROSSBILL.

CRUCIROSTRA BIFASCIATA Brehm, Ornith., III, p. 85 (1827—Thuringia and Vienna).

Loxia bifasciata (C. L. Brehm), Yarrell, II, p. 211; Saunders, p. 203.



Two-barred Crossbill *Loxia l. bifasciata*.

DESCRIPTION.—*Adult male. Winter.*—Like that of *L. c. curvirostra* but pink everywhere more brilliant and more uniform; tail fringed white on outer and inner webs and tips, with pink tinge on outer webs; primaries and secondaries narrowly fringed pinkish-white on outer webs, and narrowly (four inner secondaries broadly) tipped white; primary-coverts as primaries; greater coverts broadly tipped white with pink tinge (innermost feathers with distal half white); median coverts white, with only bases dark brown; lesser coverts tipped pinkish-white or pink. This plumage is acquired by complete moult in autumn. *Summer.*—Abrasion makes carmine still more brilliant; fringes of tail and wings gradually wear off, and white of wing-coverts becomes much reduced by wear.

Adult female. Winter and summer.—Like that of *L. c. curvirostra* but rump paler and brighter yellow, not so greenish; feathers of crown and mantle with paler fringes and darker centres, giving rather more streaked appearance, especially in worn summer-plumage; throat- and breast-feathers with dark brown centres; upper tail-coverts tipped yellowish-white; tail- and wing-feathers and wing-coverts like those of male but tinged yellow instead of pink.

Nestling.—(Not examined.)

Juvenile.—Like that of *L. c. curvirostra* but tail- and wing-feathers fringed yellowish-white as in adult female; inner secondaries, greater and median coverts, with rather smaller white tips than in adults.

First winter and summer. Male.—As in *L. c. curvirostra*—a mixture of crimson and yellow but colours paler and brighter; mantle and scapulars dark brown, tipped crimson or yellow; fringes of tail- and wing-feathers yellowish; tips of inner secondaries and greater coverts smaller than in adult, and tinged yellow instead of pink. The juvenile body-feathers, median and lesser wing-coverts, are moulted in autumn but not remiges or rectrices and not apparently greater coverts.

Measurements and structure.—♂ wing 87-99 mm., tail 57-66, tarsus 15-17, bill depth at base 10-11, length of upper mandible from feathers 16-17 (10 measured). ♀ wing 85-91. Primaries: 1st minute and hidden, 3rd longest, 2nd and 4th sometimes as long but usually 1-3 mm. shorter, 5th 4-6 shorter, 6th 14-17 shorter; 3rd to 5th emarginated outer webs. Longest secondaries between 9th and 10th primaries. Bill like *L. c. curvirostra* but finer, and tips usually more elongated and sharper.

Soft parts.—Like *L. c. curvirostra*.

CHARACTERS AND ALLIED FORMS.—Double white wing-bar distinguishes at glance all forms of *L. leucoptera* from all forms of *L. curvirostra* at all ages. *L. l. elegans* (Siberia) is doubtfully distinct as more brilliant form of Scandinavian bird, *L. l. leucoptera*

(North America) has smaller and finer bill (depth at base 7-9), is generally smaller, and brown of tail, wings, scapulars and mantle is considerably darker—almost black.

BREEDING-HABITS.—Nests in coniferous forests. *Nest.*—Said to be smaller and slighter than Common Crossbill's, but built in similar way: foundation of fir-twigs and nest of grasses, lichens, moss, and dead leaves, lined roots, lichens, feathers, etc. *Eggs.*—3-4, occasionally 5. Reliable information still unobtainable and eggs ascribed show extraordinary variation. Generally only marked with few bold spots of very dark purplish on greenish-white ground. Eggs described as averaging 20.8×14.7 and 23.52×16.6 mm., but hardly possible that both can be correct. *Breeding-season.*—From late March to end June, possibly two broods sometimes reared. *Incubation.*—No details.

FOOD.—Chiefly seeds from cones of various pines, spruces, firs, etc.

DISTRIBUTION.—*British Isles.*—Rare vagrant. A good many recorded from various parts England, but mostly on eastern side; in some years (e.g. 1845-6, and autumn 1889) a number together. About eleven authentic records Scotland, and three Ireland.

DISTRIBUTION.—*Abroad.*—Forests of north European Russia (and probably west Siberia), more or less irregularly spreading south-westwards at various times of the year. In Siberia a doubtful subspecies.

[*Loxia leucoptera leucoptera* Gm.—THE AMERICAN WHITE-WINGED CROSSBILL.]

LOXIA LEUCOPTERA Gmelin, Syst. Nat., I, 2, p. 844 (1789—North America). *Loxia leucoptera* J. F. Gmelin, Yarrell, II, p. 218; Saunders, p. 204 (in text).

DESCRIPTION.—See under "Characters and Allied Forms" above.

DISTRIBUTION.—*British Isles.*—Several recorded occurrences are dealt with by Saunders and in Yarrell, and there are others, but it is doubtful if it has occurred in a truly wild state.

DISTRIBUTION.—*Abroad.*—Northern North America. In winter southwards, irregularly as far as North Carolina, Indiana, Illinois, Kansas, Colorado, Nevada. Occurs south and east Greenland. Said to have been procured on Heligoland.]

Genus FRINGILLA L.

FRINGILLA Linnæus, Syst. Nat., ed. x, i, p. 179 (1758—Type by subsequent designation—Gray 1840—*F. caelebs*; according to Opinion 16 Intern. Comm. Nomencl. also by tautonymy).

Bill hard, somewhat long, culmen straight, bulging slightly

on sides, sharp-pointed ; nostrils near base, oval, mostly hidden by frontal plumes. First three or 2nd to 4th obvious primaries about equal and longest. Sexes differ in coloration ; young very much like females. Europe, north-west Africa, Madeira, Canaries, Azores, north Asia.

Key to species of genus FRINGILLA.

- Outer tail-feathers with much white, rump greenish
in adults, also with green tinge in juvenile . . . *F. cœlebs*, p. 92
- Outer tail-feathers with very narrow white fringes,
rump white in adults, slaty, more or less spotted
with white in juvenile *F. montifringilla*, p. 95

FRINGILLA CŒLEBS

37. *Fringilla cœlebs cœlebs* L.—THE CHAFFINCH.

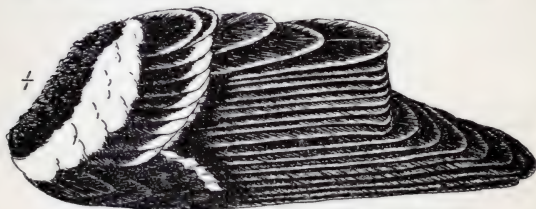
FRINGILLA CŒLEBS Linnæus, Syst. Nat., ed. x, i, p. 179 (1758—"Europa."

Restricted typical locality : Sweden).

Fringilla cœlebs gengleri Kleinschmidt, Falco, v, p. 13 (1909—England.

Typical locality : Hampstead).

Fringilla cœlebs Linnæus, Yarrell, II, p. 68 ; Saunders, p. 183.



Chaffinch (*Fringilla c. cœlebs*). ♂

DESCRIPTION.—*Adult male. Winter.*—Fore-head black, feathers tipped buff ; crown, nape, hind-neck, and upper-mantle grey-blue, more or less washed reddish-buff ; very narrow line yellowish-green below grey-blue, rest of mantle chestnut-brown ; back and rump yellowish-green ; upper tail-coverts blue-grey, tinged buff and green, and smaller coverts marked black ; lores, line over eyes, ear-coverts, and cheeks pinkish-chestnut ; chin, throat, breast, and flanks pearly-pink to brownish-pink ; lower-flanks generally washed greenish-buff ; centre of belly white ; vent and under tail-coverts creamy ; axillaries white ; tail-feathers : central pair slate-grey, fringed green, rest black, inner ones fringed green, outer pair mostly white with slanting black mark on outer part of distal half and on inner web at base, next pair same but more black at base (amount of black varies

individually), next pair sometimes with, but often without, white mark on tip of inner web; primaries and secondaries brown-black, fringed on outer webs greenish-yellow, and on inner white and with basal portions yellowish-white, showing as narrow band below coverts except in 2nd, 3rd, and 4th primaries, which have no white at base of outer webs, two innermost secondaries without white and fringed greenish-buff; greater coverts black, fringed and broadly tipped yellowish-white; median and lower lesser coverts white; remaining lesser coverts blue-grey marked black. This plumage is acquired by complete moult commencing July and sometimes June. *Summer*.—No moult, but feathers here and there on body often renewed in spring. By abrasion (varying individually) fore-head becomes black, crown and neck pure grey-blue, mantle more chestnut, tips of greater coverts smaller and purer white, and greenish-buff edges of inner secondaries wear off.

Adult female. Winter.—Fore-head, crown, nape, and mantle yellowish-brown, more greyish-brown on centre of crown and nape; back and rump yellowish-green; upper tail-coverts yellowish-brown; ear-coverts, sides of neck, and flanks greyish-brown; breast same, but paler and often tinged pinkish; chin, centre of throat, belly, and under tail-coverts paler whitish-grey, tinged brown; tail and wings as in male but browner, and white not so pure; lesser and median coverts less white and greater coverts more buff. *Summer*.—No moult but occasional feathers renewed as in male. By abrasion, crown and nape become more slate-grey, less brown, and under-parts greyer, less brownish (some individuals show considerable amount of brownish-pink on breast).

Nestling.—Down, greyish; distribution, inner and outer supra-orbital, occipital, humeral, spinal, ulnar, femoral, ventral, and crural. Mouth, inside violet-red, but hard palate orange, no tongue-spots, externally flanges white (C. B. Ticehurst, *Brit. B.*, II, p. 192).

Juvenile.—Much resembling adult female in winter but with greyish-white nuchal spot; back brown, not green; rump brownish-green; under-parts paler and tinged yellowish rather than brownish. Male differs from female in having mantle tinged chestnut-brown, ear-coverts buff, less yellowish-brown, tail-feathers and primaries and secondaries as in adult, wing-coverts whiter.

First winter. Male and female.—Like adults. The juvenile body-feathers and wing-coverts are completely moulted in July to Sept., but not remiges, primary-coverts, and rectrices.

Measurements and structure.—♂ wing 82-90 mm., tail 57-65, tarsus 14-18, bill from skull 13-15 (12 measured). ♀ wing 78-85. Primaries: 1st minute, 3rd and 4th equal and longest, 5th generally a shade shorter, 2nd 3-4 mm. shorter, 6th 5-7 shorter; 3rd to 6th emarginated outer webs. Secondaries equal 10th primary, tips square, slightly notched. Tail slightly forked. Bill thick, tapering to sharp point. A few short nasal and rectal bristles.

Soft parts.—Bill lead-blue, dark tip and whitish under lower mandible (♂ summer), whitish-brown with dark tip (♂ winter), brown, paler under (♀ and juvenile); legs and feet pale brown; iris brown.

CHARACTERS AND ALLIED FORMS.—Males of *F. c. spodiogenys* (Tunis), *F. c. africana* (Algeria, southern Morocco), and *F. c. koenigi* (north Morocco) differ from typical form in having green mantles, while males of the forms in Canaries, Madeira, and Azores have slate-blue mantles, but females of all these forms much resemble those of typical form. White tail-feathers and white double wing-bars are distinctive specific characters.

FIELD-CHARACTERS.—Its lively yet confiding disposition renders it easy to appreciate distinctive characters of plumage at short range. In flight, which is markedly undulating, both sexes, but male especially, appear to have white shoulders, and white patches on outer tail-feathers are conspicuous. Usual call-note "pink, pink," but in spring male has another cry, a clear, loud "whit"; and during breeding-season both sexes utter a Sparrow-like "chissick." In winter Chaffinches flock, often with Bramblings, Greenfinches, Sparrows, and Yellowhammers. At this season they utter a soft "tsup, tsup" when taking flight. Rattling song is happily rendered: "In another month will come a Wheatear."

BREEDING-HABITS.—Breeds in hedge-rows, gardens, and small trees, as a rule, generally at no great height. *Nest*.—Grasses, roots, wool, moss, etc., decorated externally with lichens, sometimes fragments of birch-bark or paper, neatly lined hair and sometimes a feather or two. Well and compactly built; lichens fastened together by spiders' webs. *Eggs*.—Usually 4-5, occasionally 6, 7 also recorded. Ground-colour generally greenish to brownish stone-colour, exceptionally ranging into clear blue or light olive, with spots and streaks of very dark purplish-brown, spots usually with a "penumbra." Some have only light brown cloudings, others are unmarked or have a few black streaks and spots. Average of 100 eggs, 19.3×14.6 mm. *Breeding-season*.—Begins mid-April (exceptionally earlier), most eggs laid May; usually second brood late in May or June. *Incubation*.—Lasts usually 12 days, but said to vary from 11 to 14 days. Chiefly performed by hen; male said also to take part.

FOOD.—Insects (Lepidoptera and larvæ, larvæ of Hymenoptera, aphides, Orthoptera, and small Coleoptera): fruit-buds, fruit, corn, and weeds of many species as well as garden-seeds and seedlings.

DISTRIBUTION.—*British Isles*.—Resident. Abundant and widely distributed, nesting in Orkneys but not Shetlands, nor probably O. Hebrides, where only a visitor.

MIGRATIONS.—*British Isles*.—Our residents flock in winter and

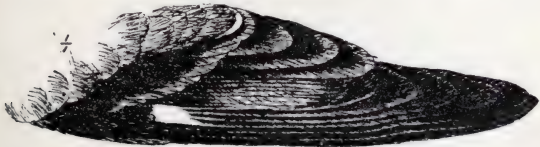
move about the country, but there is little evidence that they emigrate. Large flocks arrive from the Continent on east coast Great Britain, third week Sept. to mid-Nov., occasionally from first week Sept. Many continue westward and spread inland, while some perhaps pass south, as emigratory or passage movements are noted south coast third week Oct. to mid-Nov., extremes Oct. 4 to Nov. 25. Return movements occur south coast third week March to early April, and on east coast third week March to mid-May, extremes March 8 to May 17. Passage movements noted west coast third week Sept. to second week Nov., mid-March to early April. Winter passage movements on all three coasts occasionally in Jan. and Feb. A diminution in Sept. and an increase in Oct. and Nov. have been noticed in Ireland.

DISTRIBUTION.—*Abroad.*—Europe generally, western parts of Asia. In winter in north Africa. Replaced by supposed closely-allied forms in Corsica and Balearic Isles, and by very different races (generally looked upon as “good species”) in north-west Africa, Canaries, Madeira, and Azores.

FRINGILLA MONTIFRINGILLA

38. *Fringilla montifringilla* L.—THE BRAMBLING.

FRINGILLA MONTIFRINGILLA Linnæus, Syst. Nat., ed. x, i, p. 179 (1758—“Habitat in Europa.” Restricted typical locality: Sweden).
Fringilla montifringilla Linnæus, Yarrell, II, p. 75; Saunders, p. 185.



Brambling (*Fringilla montifringilla*).

DESCRIPTION.—*Adult male. Winter.*—Top and sides of head, neck, and mantle glossy blue-black, partially obscured by buff fringes; patch of whitish-grey in middle of nape and sides of neck greyer; feathers of mantle with pale grey bases often showing here and there; scapulars chestnut-buff, with black bases; middle of back white and of rump buff, sides of back and rump black; upper tail-coverts black, with long buff tips; throat and breast chestnut-buff (of varying intensity); flanks paler and spotted black; belly white; under tail-coverts pale buff; axillaries white and bright lemon-yellow; tail-feathers black, narrowly edged yellowish, central pair mostly grey, tipped buff and edged yellowish,

outer pair white at base of outer and at tip of inner webs, and with white or whitish diagonal central streak (of varying size) at base; wing-feathers black, with distal halves of outer webs fringed yellowish and basal parts of inner webs fringed white, with band of white showing below coverts on outer webs of 4th to 10th primaries; inner secondaries tipped and edged chestnut-buff; primary-coverts black, edged buff; greater coverts black, outer ones edged and tipped whitish and inner chestnut-buff; median coverts whitish-buff; lesser coverts bright orange-buff, with black bases. This plumage is acquired by complete moult in Aug.-Sept. *Summer*.—No moult but abrasion produces remarkable change on upper-parts. In much worn examples (June and July) whole head becomes glossy blue-black, nape marked grey, mantle blue-black, wings and tail black, with scarcely any edgings, remains of tips of greater coverts and median coverts nearly white, lesser coverts and scapulars more yellow and paler than winter, buff on throat, breast, flanks, and under tail-coverts much paler. N.B.—The effect of abrasion begins to show generally in Feb. or March, but individual variation is considerable.

Adult female. Winter.—Like male, but duller and with no blue-black, dark portions of feathers of crown and mantle being brown-black; ear-coverts greyish-brown; sides of neck and centre of nape greyer than male; scapulars and lesser wing-coverts especially with smaller and duller chestnut-buff tips; throat and breast paler than male. *Summer*.—No moult. Abrasion produces little change compared to male, but upper-parts (especially crown) become more uniform brown-black by wearing off of buff tips.

Nestling.—Down, white; distribution, inner and outer supra-orbital, occipital, humeral, spinal, ulnar, ventral, femoral, and crural (C. B. Ticehurst, *Brit. B.*, II, p. 193).

Juvenile.—Closely resembling female but rump and belly tinged yellow, greater and median coverts black-brown, with buffish-white tips.

First winter and summer. Male and female.—Apparently like adults. The juvenile body-feathers and wing-coverts are moulted in Aug.-Sept., but not primary-coverts, wing- or tail-feathers.

Measurements and structure.—♂ wing 89-94 mm., tail 55-62, tarsus 17-19, bill from feathers 11-13 (14 measured). ♀ wing 83-89. Primaries: 1st minute and hidden, 3rd longest, 4th often equal but usually 1-2 mm. shorter and equal to 2nd, 5th 3-4 shorter, 6th 12-14 shorter; 3rd to 5th emarginated outer webs. Secondaries about equal 9th primary, tips square, slightly notched. Tail rather deeply forked. Bill thick, tapering gradually to point. Good many short nasal and rictal bristles.

Soft parts.—Bill blue-black (summer), yellow with black tip (winter); legs and feet brownish-flesh; iris brown.

CHARACTERS.—No subspecies recognized. White rump, chestnut-buff wing-coverts, and yellow axillaries are distinctive.

FIELD-CHARACTERS.—Tortoise-shell coloured plumage is distinctive, and renders it easily distinguishable from Chaffinch, with which it consorts, especially in beech-woods, or in mixed flocks of Greenfinches, Sparrows, and Chaffinches in stackyard or stubble. In flight greyish-white rump is diagnostic. A low trilling chorus which Bramblings maintain can only be heard at close quarters, but call-note, a harsh "scape," is audible at considerable distance. True song seldom if ever heard in this country, but in April, just before leaving, males utter a hoarse wheezing note, similar to, but coarser than Greenfinch's "dwee."



Brambling, from above.

BREEDING-HABITS.—Similar to Chaffinch's, nesting in birch-woods and outskirts of coniferous forests, and building usually from 5 to 10 ft. from ground. *Nest.*—Rather larger and less finished than Chaffinch's, of grasses, bents, etc., generally decorated with bits of birch-bark and lichens, lined with hair, feathers, and sometimes down. *Eggs.*—5 to 7, but 8 have been found. Much same types of colour and markings as Chaffinch's, ranging from clear blue to deep brownish-olive, but often darker and greener than normal Chaffinch's eggs and similarly marked. Average of 100 eggs, 19.5×14.6 mm. *Breeding-season.*—Mid-May to early June or even July, according to latitude. *Incubation.*—Probably similar to Chaffinch's, but exact data lacking; chiefly, at any rate, performed by female. Probably single-brooded.

FOOD.—Insects; seeds of knot-grass and other weeds, beech-mast, nuts, and wheat.

DISTRIBUTION and MIGRATIONS.—*England and Wales.*—Winter-visitor, arriving north-east and east coasts England fourth week Sept. to second week Nov., extremes Sept. 5 to Nov. 19, in varying numbers, according to severity of weather. In south and west England and in Wales its numbers are still more dependent upon weather-conditions, as well as supply of beech-mast. In some years does not occur in extreme south-west and west. Most return March, but many stay until April, and occasionally to May, and exceptionally June (Yorks., June 30, 1907). Emigration

sometimes noted south-coast mid-Oct. to mid-Nov., and very occasionally immigration April, but such passage-movements do not appear to be regular. *Scotland*.—Numbers greatly influenced by weather-conditions, and most regular and abundant in south-east; in south-west and north-east more irregular, but sometimes occurring in large numbers; in north-west and O. Hebrides much scarcer; in Shetlands, Orkneys and Fair Isle fairly regular autumn and spring. Late dates: Dumfries, May 10, 1895; Fair Isle, May 20, 1909; Shetland, July 4, 1915. Reported to have nested in Scotland. *Ireland*.—In varying numbers to all quarters, but rare in west. Late date: Down, June 13, 1910.

DISTRIBUTION.—*Abroad*.—Subarctic forests of Old World, in Europe in northern Scandinavia and north Russia, in winter all over Europe and northern parts of Asia. An eastern form has been described, but does not appear to be separable.

Genus MONTIFRINGILLA Brehm.

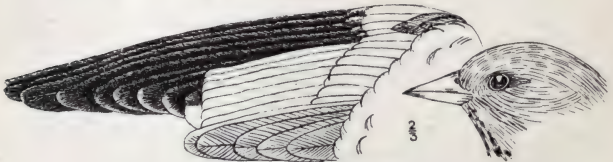
MONTIFRINGILLA Brehm, Isis, 1828, p. 1277 (Type by monotypy: *M. nivalis*, the two species mentioned by Brehm being one and the same).

Wing longer than in *Fringilla*, distance from secondaries to tip of primaries greater. First three or two visible primaries longest and almost equal. Inhabitants of mountains. One species in Europe, a number in north and central Asia, and North America.

MONTIFRINGILLA NIVALIS

39. *Montifringilla nivalis nivalis* (L.)—THE SNOW-FINCH.

FRINGILLA NIVALIS Linnæus, Syst. Nat., ed. XII, 1, p. 321 (1766—"Habitat in America." *Errore!* As typical locality accepted: Switzerland; cf. Hartert, Vög. pal. Fauna, I, p. 132). *Montifringilla nivalis* (Linn.), M. J. Nicoll, Bull. B.O.C., xv, p. 58; Saunders, Brit. B., I, p. 13.



Snowfinch (*Montifringilla n. nivalis*) ♂ adult.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-head creamy-white; crown, ear-coverts, nape, and back of neck bluish-grey, tinged brownish-buff; mantle, scapulars, and back dark brown, feathers tipped buffish; rump and upper tail-coverts black, feathers narrowly tipped white or buffish-grey, and some partially white; sides of

neck ashy-grey, tinged buff; chin and inconspicuous malar stripe creamy-white; centre of throat black, somewhat concealed by long white tips; rest of under-parts creamy-white; under tail-coverts tipped brownish; axillaries pure white; tail-feathers, central pair black, fringed buffish-white, next pair white, tipped black and with black shaft-streak at base, rest white, narrowly tipped and with concealed bases black, except outermost which has no black; first six visible primaries black, very narrowly fringed and tipped brownish-white, 7th with some white on inner web, 8th mostly white on inner web, 9th white with base black; secondaries, greater and median coverts white, with black bases except innermost which are blackish-brown, fringed and tipped white and buff; lesser coverts white, tipped blackish at point of wing; bastard-wing black; primary-coverts white, tipped black. This plumage is acquired by complete moult in autumn. *Summer*.—Some feathers of throat are renewed in March, otherwise no moult. Abrasion of tips of feathers makes throat blacker, under-parts whiter, head pure bluish-grey, mantle darker brown, creamy-white fore-head and malar stripes more distinct.

Adult female.—Like male but head browner, not so grey; sides of neck buff; black of throat less extensive and not so intense, and when freshly moulted almost entirely concealed by whitish tips; rump, upper tail-coverts, and black feathers of wings and tail browner than in male; white of primary-coverts and pair of tail-feathers next to central much more restricted than in male; lesser coverts at point of wing tipped brown.

Nestling.—(Not examined.)

Juvenile.—Much like adult female but crown and nape browner; mantle duller brown; rump and upper tail-coverts brownish; throat ashy-grey, only bases of feathers blackish; 9th (visible) primary and secondaries marked black mostly on outer webs, and fringed pale buff on distal half of outer webs; innermost secondaries, greater, median, and lesser wing-coverts as adult; primary-coverts dark brown; tail, central pair blackish-brown, fringed buff, next pair same, with small white mark on inner web, rest white, fringed buff, tipped and mesially marked black, except outer pair which is almost pure white.

First winter and summer. Male and female.—Like adults. The juvenile-plumage is completely (including wings and tail) moulted in autumn.

Measurements and structure.—♂ wing 118-126 mm., tail 68-76, tarsus 22-23, bill from skull 13-14 (12 measured). ♀ wing 115-120. Primaries: 1st minute and hidden, 2nd and 3rd about equal and longest, 4th 3-5 mm. shorter, 6th 14-17 shorter; 3rd and 4th emarginated outer webs. Secondaries between 8th and 10th primaries, tips square and notched. Tail almost square. Bill thick, tapering gradually to point. A few minute rectal bristles and very short bristle-like feathers almost covering nostrils.

Soft parts.—Bill yellow with dark tip (winter adult and juv.), black with base of lower mandible usually deep yellow (summer); legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*M. n. alpicola* (Caucasus, Persia, Afghanistan) has paler mantle and browner head, *M. n. adamsi* (Himalayas, Kashgar) has browner, not so white secondaries and wing-coverts. Some resemblance to Snow-Bunting but larger size, grey head, and black throat at once distinguish it.

BREEDING-HABITS.—Nests in high alpine districts in crannies of rocks, but where buildings exist will build in holes in walls or under eaves. *Nest*.—Bulky, built of dead grasses and moss, mixed with leaves, hair, feathers, etc., warmly lined feathers and hair. *Eggs*.—4 to 5, rarely 6; pure white, without gloss, and rather delicate. Average of 62 eggs, 23.42×16.96 mm. *Breeding-season*.—Begins in Alps end April or early May, while second brood may be found about end June (Fatio), but others have found first eggs about beginning June or even later. *Incubation*.—Period not known, nor whether male assists hen.

FOOD.—Insects (small coleoptera, orthoptera, etc.); seeds of coniferous trees and alpine plants.

DISTRIBUTION.—*England*.—Three times. Male, Rye Harbour (Sussex), Feb. 22, 1905 (*vide supra*). Two, Paddock Wood (Kent), Dec. 28, 1906, with a flock of four or five "similar-looking" birds (N. F. Ticehurst, *Brit. B.*, I, p. 189). Three, Rye, Feb. 28, 1916 (J. B. Nichols, *op. c.*, XII, p. 66).

DISTRIBUTION.—*Abroad*.—High elevations in the Alps, Pyrenees, Sierra Nevada (Spain), north Apennines, rare in south-east Europe but breeding in Montenegro and Greece. Allied forms in Asia.

Genus PASSER Briss.

PASSER Brisson, Orn. I, p. 36 (1760—Type *Passer domesticus*, the *passer* of Gessner, Aldrovandi, etc., by subsequent designation).

Bill shorter than head, heavy, clumsy; culmen slightly curved; large nostrils nearly hidden by frontal feathering. First three visible primaries about equal and longest, fourth little shorter; first a little more developed than in most other *Fringillidæ*, but not noticeable unless searched for. Wings broad, distance from end of secondaries to tip of primaries short. Tail about three-fourths of wing or more, square at end. Sexes either very different or alike; young like female. Europe, Africa, and Asia; introduced into America, Australia, New Zealand and elsewhere.

Key to species of genus PASSER.

Sides of head white with black patch	<i>P. montanus</i> , p. 104
Sides of head pale ashy-brown	<i>P. domesticus</i> , p. 101

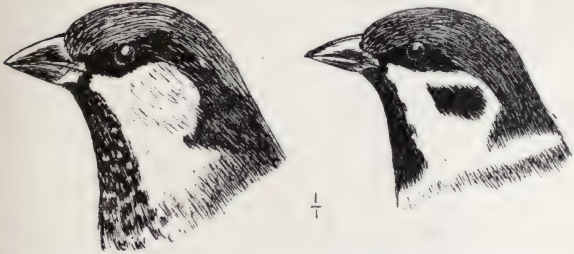
PASSER DOMESTICUS

40. *Passer domesticus domesticus* (L.) — THE HOUSE-SPARROW.

FRINGILLA DOMESTICA Linnæus, Syst. Nat., ed. x, i, p. 183 (1758—"Europa." Restricted typical locality: Sweden).

Passer domesticus (Linnæus), Yarrell, II, p. 89; Saunders, p. 179.

Passer hostilis Kleinschmidt, Falco 1915, p. 19. (Type: Tring, Herts,)*



House-Sparrow (*Passer d. domesticus*) ♂ adult. Tree-Sparrow (*Passer m. montanus*).

DESCRIPTION.—*Adult male. Winter.*—Fore-head, crown, and nape grey, with varying amount of buff tinge (occasionally some chestnut on fore-head); streak behind eyes joining patch on sides of neck and continuing as a band round back of neck chestnut, much concealed (especially on back of neck) by buffish fringes; mantle and scapulars broadly streaked black, chestnut and buff; back, rump, and upper tail-coverts much like crown but more brownish, not so grey; lores and line under eyes black; ear-coverts smoke-grey; sides of neck greyish-white, tinged buff; chin, throat, and centre of upper-breast black, partially concealed on throat and breast by whitish fringes (frequently some chestnut amongst black, very occasionally as much chestnut as black†); rest of breast and belly dull white, faintly tinged buff, and with very faint dark shaft-streaks; flanks dull grey, washed buff; under tail-coverts buffish-white, with brownish-grey centres; axillaries white; tail-feathers black-brown, fringed buff; primaries black-brown, fringed chestnut-buff on outer and white on inner webs; secondaries same, but innermost broadly fringed both webs, and tipped

* The only distinguishing character given by Pastor Kleinschmidt is size. The wings of 90 British males measure 72-81 mm., average 76.2 and of 50 Continental males 75-82, average 78.9. The Continental House-Sparrow thus averages larger than the British, but of the 90 British measured by us only 17, or about 19 per cent., could be distinguished by their size. We, therefore, cannot recognize *P. d. hostilis*. The subject has been previously discussed by Mr. E. Stresemann, *Bull. B.O.C.*, xxxiii, pp. 47-9.—H.F.W.

† Chestnut on throat may be found in first-winter birds as well as adults, and is not connected with age.

chestnut-buff; greater coverts as inner secondaries but fringes rather deeper chestnut; median coverts black at base, with long buffish-white tips forming wing-bar; lesser wing-coverts chestnut. This plumage is acquired by complete moult in Aug.-Oct. *Summer*.—No moult. Abrasion of buff fringes makes crown and nape pure French-grey, back and rump greyer but always browner than crown, mantle brighter, chestnut behind eye and on sides and back of neck more uniform, brighter and more extensive, ear-coverts, sides of neck and greater wing-coverts whiter, black of chin and throat uniform, and more extended on breast by wearing-off of white tips to feathers.

Adult female. Winter.—Fore-head, crown, nape, back of neck, back, rump, and upper tail-coverts uniform brown, tinged olive; mantle and scapulars like male but without chestnut; streak behind eye brownish-buff; below it and patch on sides of neck dark brown; ear-coverts, breast, and flanks greyish-brown, tinged buff; chin and belly whiter; centre of throat whitish, often with faint blackish mark (feathers of under-parts with more decided shaft-streaks than in male); under tail-coverts as male; axillaries buffish-white; tail, primaries, and secondaries as male but edgings paler; greater coverts fringed and tipped buff; median coverts with narrow whitish-buff tips; lesser coverts brown. *Summer*.—No moult. Abrasion makes streaking of mantle more marked, ashy-black mark on centre of throat stronger and rest of under-parts rather paler.

Nestling.—Down, absent. Mouth, inside pinkish-yellow, no tongue-spots; externally, flanges pale yellow.

Juvenile. Male and female.—Like adult female but crown and rump faintly mottled dark brown, mantle, wings, and tail paler, throat and belly white, but in male more decidedly tinged ashy-black in centre of throat.

First winter and summer. Male and female.—Like adults but in male more white on tips of feathers of chin. The juvenile-plumage is completely (including wings and tail) moulted in Sept.-Oct.

Measurements and structure.—♂ wing 72-81 mm., tail 54-58, tarsus 17-20, bill from skull 12-13 (40 British measured). ♀ wing 71-76. Primaries: 1st minute (larger in juvenile), 2nd to 4th nearly equal and longest, 5th 1-2 mm. shorter, 6th 5-7 shorter; 3rd to 5th emarginated on outer webs. Secondaries between 8th and 10th primaries, tips square, slightly notched. Tail slightly forked. Bill thick, tapering sharply at point. Few small rictal bristles and small bristle-like feathers covering nostrils.

Soft parts.—Bill black (♂ summer), horn-brown, more yellow at base (♂ Oct. to Jan. and ♀), yellow tip, brownish-black base (juv.); legs and feet pale brown; iris hazel.

CHARACTERS AND ALLIED FORMS.—Male of *P. d. biblicus* (Syria) is slightly larger and paler, *P. d. tingitanus* (north-west Africa) with

black centres to feathers of crown, *P. d. alexandrinus* (Nile valley, Alexandria to Cairo and probably further south) like *indicus* but cheeks more grey, *P. d. arboreus* (Sudan) small and brightly coloured, *P. d. niloticus* (Fayum to Wadi Halfa) paler than last, *P. d. indicus* (Arabia, Persia, India, Turkestan) small, and sides of neck and under-parts white, *P. d. pyrrhonotus* (Sind) very small, with pale grey crown.

FIELD-CHARACTERS.—Its impudent familiarity prevents confusion with any other species. Of its various notes, “chissick” (uttered in spring), “tchirp” and the “tell, tell” of alarm are those heard most often.

BREEDING-HABITS.—Invariably haunting neighbourhood of houses, nesting in almost any kind of hole or niche, in ivy or creeper, under eaves, in spouting, but also not uncommonly at considerable heights among branches of trees, or even in straggling hedges, also in House-Martins’ nests, among foundations of Rooks’ nests and in holes of cliffs. *Nest.*—Characteristically untidy; built of straw and domed with side entrance when in open, but merely a lining when inside small hole; warmly lined feathers and sometimes a little hair, wool, etc. *Eggs.*—3-5, occasionally 6 or even 7; variable in colouring, one egg in set being generally much lighter than rest; ground-colour greyish-white; generally finely and uniformly spotted dark and lighter ashy-grey and brown. Some eggs unmarked; others have big blotches or dark zone, and few showing distinct tendency to erythrism have reddish-brown markings. Average of 100 eggs, 22×15.6 mm. *Breeding-season.*—Usually begins May, and as two or three broods usually reared fresh eggs may be found till July or Aug., also exceptionally in almost every month. *Incubation.*—Lasts 13-14 days, chiefly by hen, but male also shares in work.

FOOD.—In agricultural districts chiefly corn, with few insects, seeds of weeds, etc.; in towns, insects, street refuse, and few seeds; in fruit-growing districts staple food insects (diptera, lepidoptera, hymenoptera, coleoptera, hemiptera, orthoptera, etc.), but some seeds, buds, fruit, corn, etc., also eaten.

DISTRIBUTION.—*British Isles.*—Resident. Widely distributed. Now established I. Hebrides, but in O. Hebrides confined to Castlebay (Barra), Tarbert (Harris) and Lewis, and has been noted in Uist. Local in many parts Ireland, but found on western isles.

MIGRATIONS.—*British Isles.*—Appears to move from certain exposed places in winter, but no evidence of true migration of our residents. An autumn-immigration to and passage-movements on east coast of England south of the Wash occur in autumn, Sept. 9 to end Oct., chiefly in latter half of Oct.; movements in the reverse direction taking place in spring, second week to

end of March; and there is some evidence of a cross-Channel departure in late autumn, and a return movement at end of March and beginning of April.

DISTRIBUTION.—*Abroad.*—Europe generally except Italy, eastwards to Siberia. Replaced by closely-allied forms in north Africa and parts of Asia and by a different species in Italy.

PASSER MONTANUS

41. *Passer montanus montanus* (L.)—THE TREE-SPARROW

FRINGILLA MONTANA Linnæus, Syst. Nat., ed. x, i, p. 183 (1758—"Habitat in Europa." Restricted typical locality: North Italy; cf. Hartert, Vög. pal. Fauna, I, p. 160).

Passer montanus (Linnæus), Yarrell, II, p. 82; Saunders, p. 181.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole crown and back of neck extending on sides of neck to base of ear-coverts uniform magenta-chocolate; mantle and scapulars rufous- and yellowish-brown boldly streaked black; back and rump uniform yellowish-brown; upper tail-coverts greyer brown; lores, line under eye, sides of lower mandible, chin, throat, and just reaching upper-breast black (sometimes chocolate feathers amongst black); lower portion of ear-coverts black, forming a patch; rest of ear-coverts and sides of throat and neck white, slightly marked greyish-black; upper-breast greyish-white; rest of breast and belly purer white; flanks washed buffish- and smoky-brown; under tail-coverts buffish-white with pale brown centres; axillaries pale buff; tail-feathers dark brown, fringed buff; primaries black-brown, inner webs fringed pale buff, outer webs fringed chestnut-brown, broadly at bases and at ends of emarginations; secondaries same but with more even fringes to outer webs, and inner feathers more broadly fringed and tipped; primary-coverts brown at base, black at tip; greater coverts as inner secondaries but tipped buffish-white; median coverts black, tipped buffish-white (tips of greater and median coverts making two narrow wing-bars); lesser coverts uniform brownish-chestnut. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—No moult, and abrasion causes little noticeable alteration, but white of sides of head and tips of wing-coverts becomes purer.

Nestling.—Down, absent. Mouth, inside dull pink (sometimes dark spot at tip of tongue); externally, flanges pale yellow.

Juvenile.—Much resembling adult, but crown mostly smoky-brown, feathers with small blackish tips, sides of crown and back of neck dull chestnut-brown; mantle less rufous; throat, lores, and ear-coverts greyish-black; greater wing-coverts and outer webs of wing-feathers brown, not chestnut-brown; tips of greater and median coverts buff; lesser coverts browner, not so chestnut.

First winter and summer.—Like adults. The juvenile-plumage is completely (including wings and tail) moulted in Aug.-Oct.

Measurements and structure.—♂ wing 65-73 mm., tail 51-54, tarsus 16-18, bill from skull 10-11.5 (12 measured). ♀ wing as male. Wing-formula and structure as in House-Sparrow.

Soft parts.—Bill black (summer), blackish-brown (winter and juv.); legs and feet pale brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*P. m. dilutus* (east Persia, Turkestan) is paler; other forms in eastern and south-eastern Asia differ in size of bill. Differs from House-Sparrow in sexes being alike, smaller size, magenta-chocolate crown and nape, black spot on ear-coverts, whiter sides of neck, whitish tips of greater coverts, smaller and whiter tips of median coverts, more yellowish axillaries, black of throat without white tips in winter and not so extended on breast.

FIELD-CHARACTERS.—Though often feeding in winter in farmyards with other Finches, is usually of retiring nature. Both sexes are alike and differ from male House-Sparrow in smaller size, trimmer build, black patch on ear-coverts, and chocolate-coloured, not grey, crown. Double white wing-bar is another, though less obvious, distinction. Notes bear general resemblance to House-Sparrow's, but are perhaps shriller, and "chee-ip, chup" is distinctive. Birds flying across open fields—often singly—may be detected by their sharp "teck, teck."

BREEDING-HABITS.—More retiring than House-Sparrow but locally common in suburbs of some large towns, breeding in holes of ivy-covered trees, pollarded willows, haystacks, thatched roofs, quarries, and old nests of larger birds; also in Woodpecker's holes and Sand-Martin's burrows. *Nest.*—Very similar to House-Sparrow's, though smaller, but never built in open among branches; often shows little trace of roof. Materials similar. *Eggs.*—4-6, rarely 7 or 8, much smaller than House-Sparrow's, darker, with finer stippling, browner in general tint, and more glossy. One light egg also commonly found in each clutch. Average of 103 eggs, 19.5×14 mm. *Breeding-season.*—Apparently variable, many not laying till late May or even in June in north Scotland, but some said to breed April. At least two broods. *Incubation.*—Lasts 13-14 days: shared by both sexes (Naumann).

FOOD.—Seeds of weeds, corn, as well as insects of various kinds.

DISTRIBUTION.—*England and Wales.*—Resident. Widely spread but local, especially in extreme south-west (where it appears not to nest), south and west Wales and Lancs., Westmorland and Cumberland. Has nested Isle of Man. *Scotland.*—Mostly on east side, very local and rare west side. Breeds in some O. Hebrides,

even as far west as St. Kilda, very rarely in Shetlands, in Fair Isle, but apparently not in Orkneys. *Ireland*.—Local resident, co. Dublin since 1852, and recently on coasts of Londonderry, Mayo, Antrim and Donegal, and on Inishtrahull Is. (Donegal). Once seen in Sligo and once in Kildare. Once occurred off Wexford.

MIGRATIONS.—*British Isles*.—Immigration and passage-movements east coast England, beginning Oct. to first week Nov., extremes Sept. 17 to Nov. 29, and return March 18 to April 20 (extremes). Some evidence of immigration south-east coast end of March. No evidence of migration to Ireland.

DISTRIBUTION.—*Abroad*.—Europe generally and Siberia. Replaced by closely-allied forms in east Siberia, Japan, Turkestan, and Persia, India and China, Greater Sunda Islands, Hainan and Formosa.

Genus EMBERIZA L.

EMBERIZA Linnaeus, Syst. Nat., ed. x, i, p. 176 (1758—Type *E. calandra*—by subsequent designation: Jenyns 1833 says, "Our common Bunting is the type." This is preferable to Gray's later designation of *E. citrinella* as type, because *E. calandra* is the most typical species of the genus).

This genus has been split into three to ten genera and subgenera, but it is desirable to keep the natural assemblage, as here adopted, together under one name, as nearly all differences on which genera have been based—if stated at all—are bridged over.

Typical Buntings have somewhat short, conical, hard, sharp-pointed beak, with cutting-edges more or less incurved; upper mandible, and following it lower, forms sharp mandibular angle. In roof of mouth a more or less developed hump, absent in some species, seldom so well developed as in *E. calandra*; all intergradations between that of latter and total absence; also between highly-arched bill of *E. pyrrhuloides* and thin one of *E. schoeniclus* wonderful intergradations in various forms of *E. palustris*. Claws strongly curved, hind claw shorter than hind toe. Wings well developed, first primary rudimentary, not visible; 2nd to 5th primaries generally nearly equal and longest, but sometimes (cf. *E. cia*) 6th almost as long as 3rd, 4th, and 5th, and 2nd distinctly shorter; in other cases (cf. *E. hortulana*) 5th distinctly shorter than 2nd to 4th. Tail long, emarginate. Nostrils more or less covered by frontal plumes. Palearctic, African, and Indian regions, absent from Australian region, and represented by closely allied genera in America: 31 Palearctic species with many subspecies.

Key to species of genus EMBERIZA.

- 1 { Throat black, abdomen chiefly or entirely yellow . . . 6
 Throat black, abdomen white 7
 Throat uniform yellow, abdomen rufous . . . *E. hortulana* ♂ ad., p. 122
 Throat and rest of under-parts uniform yellow :
 E. melanocephala ad., p. 115
 Throat yellow or buff, under-parts with yellow, but
 not uniform 2
 Throat white or buff, crown not uniform, under-parts
 without any yellow whatever 8
 Throat white, crown and ear-coverts black :
 E. rustica ♂ ad. summer, p. 129
 Throat greyish-white, crown and ear-coverts chestnut :
 E. castaneiceps ♂ ad., p. 127
 Throat uniform grey, abdomen rufous, ear-coverts
 greyish *E. cia* ♂ ad., p. 124
 Throat chestnut, middle of abdomen white :
 E. leucocephala ♂ ad., p. 113
- 2 { Rump and upper tail-coverts distinctly chestnut . . . 3
 Rump and upper tail-coverts not distinctly, or without
 any, chestnut 4
- 3 { Crown yellow or brown *E. citrinella*, p. 110
 Crown chestnut *E. aureola* ♂ ad. winter, p. 117
- 4 { Tail with white 5
 Tail without pure white *E. melanocephala* juv., p. 116
- 5 { Under wing-coverts sulphur yellow . . . *E. cirrus* ♀ and juv., p. 120
 Under wing-coverts white *E. aureola* ♀ and juv., p. 118
- 6 { Crown black, back uniform chestnut : *E. melanocephala* ♂ var., p. 115
 Crown and rump dark chestnut : . . . *E. aureola* ♂ ad. summer, p. 118
 Crown and rump olive-green or brown and striped :
 E. cirrus ♂ ad., p. 120
- 7 { Bill slender, culmen very slightly curved : *E. schoeniclus* ♂ ad., p. 133
 Bill thick, culmen strongly curved . . . *E. palustris* ♂ ad., p. 136
- 8 { No white in tail *E. calandra* ♂, ♀ and juv., p. 108
 With white in tail 9
- 9 { Rump more or less chestnut 10
 Rump without chestnut 13
- 10 { Lesser upper wing-coverts and spots on chest chest-
 nut *E. rustica* ♂ ad. winter, ♀ and juv., p. 128
 No chestnut spots on chest nor chestnut upper wing-
 coverts 11

- 11 { Ear-coverts chestnut *E. castaneiceps* ♀ ad., p. 127
 { Ear-coverts brownish 12
- 12 { Middle of abdomen white *E. leucocephala* ♀ and juv., p. 114
 { Middle of abdomen buff or rufescent, tips of median
 coverts whitish *E. cia* ♀ and juv., p. 125
 { Middle of abdomen buff, tips of median coverts buff :
E. castaneiceps juv., p. 127
- 13 { Ear-coverts uniform cinnamon-rufous *E. pusilla*, p. 131
 { Ear-coverts not uniform cinnamon-rufous 14
- 14 { Belly rufous-buff *E. hortulana* ♀ and juv., p. 123
 { Belly whitish 15
- 15 { Bill slender, culmen very slightly curved :
E. schoeniclus ♀ and juv., p. 134
 { Bill thick, culmen strongly curved : *E. palustris* ♀ and juv., p. 136

EMBERIZA CALANDRA*

42. *Emberiza calandra calandra* L.—THE CORN-BUNTING.

EMBERIZA CALANDRA Linnæus, Syst. Nat., ed. x, i, p. 176. (1758—
 "Habitat in Europa." Restricted typical locality: Sweden).
Emberiza miliaria Linnæus, Yarrell, II, p. 38; Saunders, p. 207.

DESCRIPTION.—*Adult male and female. Winter.*—Upper-parts yellowish- to greyish-brown streaked black-brown, rump and upper tail-coverts with fewer and much finer streaks and latter with whitish tips; lores and chin uniform buff; ear-coverts as crown; indistinct stripe behind eye, base of sides of neck, throat, breast, and flanks buff with triangular spots and streaks of black-brown; centre of breast with few streaks and belly without streaks yellowish-buff or buffish-white; under tail-coverts with pale brown centres; axillaries pale pinkish- or yellowish-buff; tail-feathers dark brown with buff tips and fringes (outer pair occasionally with faint indication of wedge-shaped mark on inner webs); primaries black-brown inner webs narrowly fringed whitish, outer webs buffish-brown; secondaries same but with more rufous fringes, especially innermost which have wider fringes and pale tips; greater and median coverts as inner secondaries; lesser coverts more greyish-



Corn-Bunting (*Emberiza c. calandra*).

* In 1758 Linnæus named the Corn-Bunting *calandra*, and we cannot accept his alteration of 1766, when he called it *miliaria* without explanation.—E.H.

brown. This plumage is acquired by complete moult in Sept.-Oct. *N.B.*—There is much individual variation between a deep buff and a grey tint in brown of upper-parts and between yellowish-buff to buffish-white in under-parts, but British specimens are never so grey-brown on upper-parts nor so whitish on under-parts in winter as many Continental specimens. *Summer.*—No moult. Abrasion makes brown of upper-parts considerably paler and more greyish, less buff, and under-parts much whiter, less buff, and the streaks and spots browner, smaller and less numerous, some being worn away altogether.

Nestling.—Down, yellowish-buff, long and plentiful; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, crural and ventral; filaments on uropygium. Mouth, inside flesh, no tongue-spots; externally, flanges yellow.

Juvenile.—Ground-colour of upper-parts paler (buff or buffish-brown) than adult and black-brown streaks much broader and more prominent. Centre of crown often with few or no streaks, sides of crown with dark streaks coalescing and forming stripes; upper tail-coverts with distinct dark brown centres; lores and distinct stripe over and behind eyes varying pale to deep buff; ear-coverts more buff and less marked black than adult; chin and throat almost uniform buff with a few black-brown spots in malar region; upper-breast much as adult; rest of breast, belly, and under tail-coverts whiter and uniform; flanks with very few streaks; tail, wing-feathers (especially inner secondaries) and all wing-coverts with well-marked margins and tips of buff.

First winter and summer.—Like adults. The juvenile-plumage is completely (including wings and tail) moulted in Sept.-Oct.

Measurements and structure.—♂ wing 89-101 mm., tail 67-76, tarsus 24-27, bill from skull 12-15 (12 British measured). ♀ wing as male. Primaries: 1st minute and hidden, 3rd and 4th longest, 2nd often equal sometimes 1 mm. shorter, 5th 2-4 shorter, 6th, 9-11 shorter; 3rd to 5th emarginated outer webs. Secondaries about equal 9th primary but longest equals 6th. Other structure as *E. citrinella* but knob on palate is considerably larger.

Soft parts.—Bill dark horn along ridge of culmen, rest yellowish; legs and feet straw-yellow tinged flesh; iris dark brown.

CHARACTERS AND ALLIED FORMS.—Subspecies which have been described do not seem to be satisfactorily separable. Lark-like coloration, heavily streaked breast, and want of white in outer tail-feathers distinguish it from all other British Buntings.

FIELD-CHARACTERS.—Found not only in cultivated districts but on rough pastures and wastes, especially near coast. In winter assembles in flocks. Unobtrusive and sluggish in temperament, and without any outstanding feature in its brown plumage. In appearance a robust, blunt-headed Sky-Lark, lacking white outer tail-feathers; it would often be overlooked except for its song.

From Feb. to Oct. the short, monotonous strain, like the jangling of a bunch of keys, is uttered, often with great persistence, from some conspicuous perch. On leaving perch the singing bird often flies with dependent legs. Alarm-note is a metallic "chip."

BREEDING-HABITS.—Generally breeds in mowing-grass or corn-fields, less frequently in scrub and furze on downs at some distance above ground. *Nest.*—Built of bents, grasses, etc., lined finer materials and few hairs. *Eggs.*—3-6 in British Isles. Ground-colour greyish-white to light sienna-brown, with bold, brownish-black, straggling lines and few spots. Some devoid of markings, others have dark streaks on red-brown ground, and some show bluish-tint in ground. Average of 100 eggs, 24.3×17.6 mm. *Breeding-season.*—Begins late May, sometimes not till June or even July; eggs have been taken in Aug. and Sept. *Incubation.*—Period 14 days; chiefly by hen (Naumann). Probably in some cases double-brooded.

FOOD.—Chiefly seeds and corn, but also buds of trees, and insects (cockchafers and small beetles).

DISTRIBUTION.—*British Isles.*—Resident. Common in most coasta regions throughout, but generally local inland, though sometimes common where found.

MIGRATIONS.—*British Isles.*—Breeding-birds, or at all events many of them, emigrate in autumn from Great Britain, and perhaps also from Ireland. Immigrants noted east coast Great Britain, and flocks occur other parts in autumn. In Shetlands and Fair Isle occurs on both passages.

DISTRIBUTION.—*Abroad.*—From south Sweden in the north throughout Europe to north Africa and west Asia. Forms from west Siberia, Corsica, and Canary Islands have been separated, but are all very closely allied and require confirmation.

EMBERIZA CITRINELLA

43. *Emberiza citrinella citrinella* L. — THE YELLOW BUNTING.

EMBERIZA CITRINELLA Linnaeus, Syst. Nat., ed. x, i, p. 177 (1758—"Habitat in Europa." Restricted typical locality: Sweden).
Emberiza citrinella Linnaeus, Yarrell, II, p. 43; Saunders, p. 209.

DESCRIPTION (Plate 5).—*Adult male.* *Winter.*—Centre of crown and nape bright yellow streaked dark brownish-green, similar streaks coalescing and forming narrow lines on sides of crown from nostrils, broadening at sides of nape; hind-neck brownish-green; mantle, scapulars, and back yellowish- to chestnut-brown, boldly streaked black-brown; rump and upper tail-coverts chestnut, with small greyish-white tips; ear-coverts and sides of neck yellow, streaked

dark greenish ; lores, over and behind eyes, chin and throat bright yellow sparsely streaked dark greenish* ; moustachial stripe (sometimes absent) chestnut ; upper-breast olive-green ; lower-breast (especially on sides) and flanks chestnut, tinged yellow and often with black-brown streaks on flanks ; belly and axillaries bright yellow ; vent and under tail-coverts same but streaked chestnut and dark brown ; tail brown-black, central pair fringed yellowish- or chestnut-brown, two outer pairs narrowly fringed greenish-yellow on outer webs, and with large wedge-shaped white marks on distal two-thirds of inner webs ; primaries black-brown, outer webs narrowly fringed greenish - yellow and inner greyish - white ; secondaries same, but with more brownish fringes, and innermost with broad chestnut fringes and tips ; primary-coverts like primaries ; greater coverts like innermost secondaries but often with paler tips ; median coverts tipped chestnut or yellowish-brown, and sometimes yellow ; lesser coverts fringed yellow and chestnut. This plumage is acquired by complete moult from Aug. to Oct. *Summer*.—No moult. Abrasion makes crown and throat more uniform and paler yellow, upper-parts more strongly streaked, sides of breast and flanks brighter chestnut, greenish-yellow edges to wing-feathers also wear off.

Adult female. Winter.—Resembling male but crown and throat much less yellow and more dark green ; breast and flanks reddish-brown streaked black-brown, not so chestnut as male ; belly paler yellow. *Summer*.—Abrasion makes plumage rather brighter and more striated.

Nestling.—Down, smoke-grey, fairly long and plentiful ; distribution, inner supra-orbital, occipital, humeral, ulnar, spinal, femoral, ventral, and crural. Mouth, inside pink, no spots ; externally, flanges bright pale yellow.

Juvenile. Male.—Resembling first-winter female but browner and more streaked and less chestnut rump ; paler and duller yellow throat and belly ; with usually blacker, not so brown and much more prominent streaks on breast and flanks ; tips of median and greater coverts paler, and divided centrally by dark brown. *Female*.—Greyer, not so yellowish on crown, throat and belly as juvenile male.

First winter and summer. Male.—Closely resembling adult female but yellow brighter, and breast and flanks chestnut, not brown ; as compared with adult male yellow paler, not so deep and brilliant, with more brownish-green and less yellow on crown, ear-coverts, and sides of neck. The juvenile body-feathers, wing-coverts, four inner secondaries and occasionally middle pair of tail-feathers moult in July to Oct., but not primary-coverts nor rest of remiges and rectrices. *Female*.—Like adult female but crown and nape yellow-brown (not dark green) streaked black-brown, scarcely any pure yellow showing on crown ; throat and

* Very rarely throat has more or less chestnut (*cf.* Ibis, 1901, plate x.).

breast more buff-yellow, and marked brown, belly paler yellow. Moults as in male.

Measurements and structure.—♂ wing 82-93 mm., tail 66-75, tarsus 16-18, bill from skull 12.5-14 (15 measured). ♀ wing 80-88. Primaries: 1st minute and hidden, 3rd usually longest, 4th and 5th sometimes equal to 3rd but usually 1-2 mm. shorter, 2nd usually 2-3 shorter than 3rd, 6th about 8 shorter; 3rd to 6th emarginated outer webs. Secondaries about equal 9th primary but longest between 7th and 8th; tips square, very slightly notched. Tail forked. Bill: upper mandible flattish and sharply pointed, with a knob in centre of palate, lower mandible thicker, with under-part of distal portion sloped up at sharp angle. Minute rectal and nasal bristles. Long filoplumes often observable on hind-neck.

Soft parts.—Bill: upper mandible dark bluish horn-colour, lower paler; legs and feet pale flesh-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*E. c. erythrogenys* (East Prussia and eastwards) is paler on upper-parts. *E. cirrus*, male, has black chin and upper-throat, dark crown and olive-brown rump, female is less yellow on belly, darker streaked on breast, greyer on crown, and yellow-brown on rump, juvenile is paler buff on upper-parts, and buff, not chestnut, on rump. *E. melanocephala* both sexes and all ages are unstreaked on under-parts. *E. aureola*, female and young, have no yellow on crown, less streaked breast, whitish axillaries and tips to median coverts. Other species have no yellow on abdomen.

FIELD-CHARACTERS.—Like most Buntings, differs from finches in slighter build and longer tail. Predominance of yellow in plumage of male is characteristic, but more soberly coloured female is not readily distinguished from some allies except by the chestnut rump. White in lateral tail-feathers conspicuous in flight. In winter assembles in small bands, often associating with Chaffinches, Sparrows, and Greenfinches in farmyards and fields. Song well described by words, "A little bit of bread and no cheese." A clear loud single "zit" functions as call- and alarm-note. In winter, assembled birds utter a liquid chirruping note when disturbed.

BREEDING-HABITS.—Breeds in hedge bottoms, by road-sides, and at foot of bushes, generally on or near ground and frequently partly hidden by grass, less commonly some feet above it. *Nest.*—Built of stalks, bents, and a little moss, lined horsehair and fine bents. *Eggs.*—3-5, rarely 6. Ground-colour varies from whitish to pale purplish-white (normal) and light brownish-red, pencilled with fine hair-lines of dark brown, and few spots. Some without markings; others approach eggs of Cirl- and Corn-Buntings, but normal eggs have much finer lines and few bold markings. Average of 100 eggs, 21.2×15.9 mm. *Breeding-season.*—Begins end April, but usually from May till Aug., rarely Sept. and Oct. *Incubation.*—Lasts 13-14 days, chiefly by hen. *Fledging-period.*—13 days. Two or three broods.

FOOD.—Chiefly vegetable: corn, and seeds of weeds, wild-fruits, etc.; also insects (coleoptera, lepidoptera and larvæ) and spiders.

DISTRIBUTION.—*British Isles*.—Resident. Common and generally distributed, but does not nest in some O. Hebrides, now common Orkneys, but seldom noticed Shetlands except on migration; occurs Fair Isle both passages, but chiefly autumn.

MIGRATIONS.—*British Isles*.—Flocks in winter, but little evidence that our breeding-birds emigrate. Immigrants from north appear east coasts Great Britain in Oct. and Nov. and return in spring.

DISTRIBUTION.—*Abroad*.—Europe generally from about lat. $65\frac{1}{2}^{\circ}$ to 70° N., but in south Spain and south Italy only in winter, and absent from Greece. Replaced by allied forms in Siberia and east Europe. Local races require further study (see Gengler, Orn. Jahrb., 1912, pp. 88-92).

EMBERIZA LEUCOCEPHALA

44. *Emberiza leucocephala* S. G. Gm.—THE PINE-BUNTING.

EMBERIZA LEUCOCEPHALOS S. G. Gmelin, Nov. Comm. Acad. Sci. Imp. Petropol., xv, p. 480, pl. 23, fig. 3 (1771—Astrakhan).

Emberiza leucocephala W. Eagle Clarke, Scot. Nat., 1912, p. 8; cf. Brit. B., v, p. 239.

DESCRIPTION (Plate 5).—*Adult male*. *Winter*.—Fore-head and sides of crown black, much obscured by buffish-brown fringes and tips; centre of crown white, more or less obscured by brown and black tips; back of neck almost uniform greyish-brown; mantle and scapulars streaked black with chestnut markings and yellowish-brown edgings; rump chestnut tipped buff; upper tail-coverts same but with white tips and black shaft-lines; narrow line under eye and in centre of lores buffish-white; ear-coverts same margined at base of neck with line of blackish-brown; lores and continuing in broad stripe round and behind eyes to base of neck, chin, and upper-throat extending to sides of neck chestnut, more or less obscured by tips of buff with small black spots; below chestnut of throat white band,* obscured by similar tips; upper-breast chestnut with long buffish-white tips; flanks same, but streaked black mesially; centre of breast, belly, and vent pure white; under tail-coverts white with dark brown shaft-streaks; axillaries white with dusky centres and often with slight yellowish tinge; tail brown-black, central pair fringed chestnut-brown, outer pair with some white on outer web and large white wedge covering most of inner web, penultimate pair with smaller white wedge on distal half of inner web; primaries and secondaries black-

* Exceptionally throat is white or yellowish-white, and centre of crown tinged pale yellow. This species appears to hybridize with *E. citrinella* in west Siberia (*Journ. f. Orn.*, 1903, p. 145, pl. vii).

brown, inner webs fringed white, outer webs of outer primaries fringed white, and of inner primaries and secondaries greenish-brown; innermost secondaries and greater coverts broadly fringed and tipped chestnut-brown; median coverts same, but tips whitish; lesser coverts greyish-brown. This plumage is acquired by complete moult in early autumn. *Summer*.—A partial moult apparently confined to regions of lores and ear-coverts and few feathers of white "bib" takes place in Feb. and March, new feathers of ear-coverts and line under eye and in centre of lores being pure white; otherwise no moult, but abrasion gradually makes centre of crown pure white bordered with greyish-black; chin and throat uniform pinkish-chestnut with white "bib" below chestnut; breast and flanks more brownish-chestnut and always with some white tips.

Adult female. Winter.—Like male but whole crown streaked black with buffish-brown edgings and only bases of feathers in centre part whitish; lores and eye-stripe buffish with a little chestnut near base of feathers; ear-coverts brown with creamy patch on sides of neck; chin and throat pale buff, spotted dark brown and with varying amount of chestnut (sometimes absent) at bases of feathers; small creamy patch in place of white "bib" of male; breast and flanks streaked blackish and with little chestnut. *Summer*.—Same moult as male, but this and abrasion cause little change. Centre of crown becomes greyer, and dark spots on throat and streaks on breast become more prominent and chestnut more marked when present.

Nestling.—(Not examined.)

Juvenile.—Much like winter female, but with only indication of pale bases to feathers of centre of crown; rump brownish-chestnut, streaked black; rest of upper-parts more tawny than winter female; throat whitish, streaked black; breast and flanks tawny-buff, streaked black-brown; under tail-coverts rufous-chestnut in one specimen, buffish-white with fine dark mesial streaks in another.

First winter and summer.—Apparently like adults. The juvenile body-plumage and lesser and median wing-coverts are moulted in autumn but apparently not rest of wings nor tail.

Measurements and structure.—♂ wing 90-95 mm., tail 73-79, tarsus 19-20.5, bill from skull 10.5-12 (12 measured). ♀ wing 82-91. Primaries: 1st minute and hidden, 3rd and 4th usually equal and longest, 2nd and 5th 1-3 mm. shorter, 6th 6-8 shorter; 3rd to 6th emarginated outer webs. Other structure as *E. citrinella*.

Soft parts.—Bill: upper dark brown, lower pale brown; legs and feet yellowish-brown; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. White bases to feathers of centre of crown distinguish adult male and female, latter being much like *E. citrinella* with all yellow replaced by white.

Younger birds differ from other British Buntings with white abdomens, in the combination of chestnut rump and brown lesser wing-coverts *E. rustica* having both chestnut, *E. pusilla* both brown, and *E. schœniclus* lesser coverts chestnut and rump brownish-grey or buff.

BREEDING-HABITS.—Nests among clumps of small bushes or edge of thickets on ground among grass like Yellow Bunting. *Nest.*—Also similar, of dead grasses, lined horsehair and finer grasses. *Eggs.*—4-6; resembling Yellow Bunting's. Ground varies from light pinkish to violet or greenish-white; numerous fine brown hair-lines and few spots; pale ashy shell-marks. Average of 54 eggs, 21.48×16.1 mm. *Breeding-season.*—End of May and July. *Incubation.*—Period unknown; hen incubates. Two broods.

FOOD.—Seeds of grasses and mountain-plants; young fed with orthoptera and cicadæ.

DISTRIBUTION.—*Scotland.*—One. Male, Fair Isle (Shetlands), Oct. 30, 1911 (*ut supra*).

DISTRIBUTION.—*Abroad.*—Breeds from west Siberia (Ural) to east Siberia. Migrates to China, Mongolia, Turkestan, casually to Europe (Italy, Dalmatia, Russia, south France, Austria, Heligoland).

EMBERIZA MELANOCEPHALA

45. *Emberiza melanocephala* Scop.—THE BLACK-HEADED BUNTING.

EMBERIZA MELANOCEPHALA Scopoli, Annus I, Hist. Nat., p. 142 (1769—Carniola).

Euspiza melanocephala (Scopoli), Yarrell, II, p. 64; *Emberiza melanocephala*, Scopoli, Saunders, p. 205.

DESCRIPTION (Plate 5).—*Adult male. Winter.*—Fore-head, crown, nape black, almost entirely obscured by buff-brown tips to feathers; lores and ear-coverts same, but black less obscured; scarcely visible collar at back of neck yellow and chestnut; mantle and scapulars chestnut, much obscured by long buff-brown fringes, most of the tips having dark shaft-lines (some adult specimens have varying number of feathers of mantle brown with mesial dark streaks); back and rump mixture of yellow and chestnut; upper tail-coverts brown, marked yellow or chestnut and tipped grey; chin and tibial feathers yellowish-buff; small patch of chestnut on each side of breast; rest of under-parts * yellow, much obscured by buffish-white tips to feathers, especially on throat, breast, and flanks;

* Occasional specimens have black feathers on throat, and very rarely entirely black throat.

axillaries pale yellow ; tail black-brown very narrowly fringed buff, and at base more broadly yellowish, outermost pair with faint indication of wedge-shaped mark ; wing-feathers black-brown very narrowly edged buff, inner secondaries broadly fringed buffish or chestnut-brown ; greater coverts fringed and tipped buff ; median coverts tipped whitish-buff ; lesser coverts chestnut and brown, tipped buff. This plumage is acquired by a complete moult from July to Nov. or Dec. *Summer*.—No moult. Abrasion of tips of feathers gradually makes head entirely black, mantle uniform chestnut, and under-parts bright canary-yellow, narrow yellow collar at back of neck and chestnut patches on breast more prominent.

Adult female. Winter.—Crown brown, streaked black ; mantle brown and chestnut-brown, lightly streaked black-brown ; scapulars mostly brown without chestnut ; rump as in male, but duller ; ear-coverts brown ; under-parts paler and more buff than in male ; axillaries buffish-white, tinged yellow. *Summer*.—Mantle becomes rather more uniform chestnut-brown, but never so bright and uniform as in male, and under-parts become yellower but never so bright as in male.

Nestling.—(Not examined.)

Juvenile.—Crown sandy-buff, with short streaks or spots of black ; mantle broadly streaked brown-black, feathers broadly edged and tipped buff ; rump and upper tail-coverts sandy-buff, lightly streaked brown-black ; ear-coverts sandy-buff ; chin, throat, and belly pale buff ; breast and flanks rather darker, with sometimes a few narrow brown streaks ; under tail-coverts buffish-yellow ; axillaries buff, tinged yellow ; tail- and wing-feathers as adult but with broader buff fringes ; inner secondaries and all wing-coverts broadly fringed and tipped sandy-buff.

First winter and summer. Male.—Like adult and apparently indistinguishable, though some specimens with brown feathers amongst chestnut of mantle and brownish- or yellowish-buff ear-coverts may be first-summer birds, though undoubtedly adults sometimes have such feathers. The juvenile plumage is completely (including wings and tail) moulted in June-Dec. *Female*.—Differs from adult in crown and mantle being brown, streaked black-brown ; rump tinged greenish-yellow ; throat and breast pale buff ; flanks rather darker ; centre of belly tinged yellow ; under tail-coverts yellow as adult ; axillaries whitish-buff.

Measurements and structure.—♂ wing 92-98 mm., tail 70-74, tarsus 21-23, bill from skull 13-15 (12 measured). ♀ wing 84-90. Primaries : 1st minute and hidden, 3rd usually longest, 2nd and 4th as long or 1-2 mm. shorter, 5th 4-5 shorter, 6th 10-12 shorter ; 3rd to 5th emarginated outer webs. Other structure as *E. citrinella*.

Soft parts.—Bill : lead-blue, under mandible greyer ; legs and feet dark flesh ; iris brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. Unstreaked under-parts, yellow under tail-coverts and want of white in tail distinguish it at all ages from all other British Buntings.

FIELD-CHARACTERS.—Large size and entirely uniform yellow or yellowish under-parts make it distinct from other Buntings (H. Lynes).

BREEDING-HABITS.—Breeds in bushes, sometimes among standing peas, or in vineyards, a few feet from ground. *Nest.*—Roughly built of dead plants, thistle-leaves, and grass, lined fine grasses and hair. *Eggs.*—4-5, rarely 6, once 7; ground-colour light greenish-blue, spotted evenly with brown and violet shell-marks; occasionally unmarked or with dark blotches. Average of 100 eggs, 22.4×16 mm. *Breeding-season.*—From mid-May to end June. *Incubation.*—Lasts 14 days; by both sexes. One brood.

FOOD.—Seeds of cultivated plants and weeds; also insects.

DISTRIBUTION.—*Great Britain.*—Six England, three Scotland. Female near Brighton (Sussex) about Nov. 3, 1888. Male, Notts., June or July, 1884. Male near Dunfermline (Fife) Nov. 5, 1886. Female, Bexhill (Sussex) Nov. 3, 1894 (Saunders, p. 205). Male, Little Common (Sussex) April 21, 1905 (*Zool.*, 1905, p. 267). Female, Fair Isle, Sept. 21, 1907 (*Ann. S.N.H.*, 1908, p. 76). Male near Westfield (Sussex) May 5, 1909 (*Brit. B.*, III, p. 412). Young male, Fair Isle, Aug. 25, 1910 (*Studies in Bird Migration*, II, p. 113). Male, Battle (Sussex), April, 1912 (*Bull. B.O.C.*, XXXIII, pp. 133-4). [Male recorded from near Halifax (Yorks.), Dec., 1910 not authentic.]

DISTRIBUTION.—*Abroad.*—South-east Europe, Crete, Cyprus, and Asia Minor to Palestine, Persia, and Baluchistan, occasionally west to Italy; casual visitor to south Germany, Austria, Switzerland, south France, Heligoland, Malta. In winter in north-west India.

EMBERIZA AUREOLA

46. *Emberiza aureola* Pall.—THE YELLOW-BREASTED BUNTING.

EMBERIZA AUREOLA Pallas, Reise d. versch. Prov. d. Russ. Reichs, II, p. 711 (1773—River Irtysh in Siberia).

Emberiza aureola Pallas, Saunders, Bull. B.O.C., XVI, p. 10; *id.*, Brit. B., I, p. 13.

DESCRIPTION (Plate 5).—*Adult male. Winter.*—Whole upper-parts dark pink-chestnut, partly concealed by buffish tips of feathers; scapulars and mantle with inconspicuous mesial black marks; upper tail-coverts browner, not so chestnut as rest of upper-parts;

lores and narrow line over eye buff; ear-coverts blackish, marked buff; chin and throat extending to sides of neck, centre of breast, and belly yellow, washed buff; narrow band across upper-breast chestnut, tipped buff (basal portion of these feathers yellow or white, with black line dividing this from chestnut distal portion); sides of breast and flanks yellow, with broad chestnut-black streaks and whitish tips; vent and under tail-coverts buffish-white; axillaries white, tinged yellow; tail brown-black fringed brown, outermost pair with large diagonal white band across both webs, penultimate pair with small white mark at tip; primaries and secondaries brown-black, fringed greyish on inner, and brown on outer webs; innermost secondaries and greater coverts black and chestnut, fringed and tipped buffish; median and lower lesser coverts buffish or yellowish-white, freckled dusky; upper lesser coverts black, narrowly fringed whitish. This plumage is acquired by complete moult in early autumn. *Summer*.—A moult confined to head takes place in April and May, and new feathers of fore-head, fore-part of crown, lores, round eyes, ear-coverts, chin, and upper-throat are jet-black; abrasion of tips of feathers gradually makes upper-parts uniform chestnut and breast-band and dark streaks on flanks more prominent; median and lesser coverts whiter, and greater more chestnut.

Adult female. Winter.—Centre of crown and back of neck yellowish-brown, with narrow black mesial streaks; sides of crown blacker, forming dark lines; mantle and scapulars with broader black streaks; rump more uniform and with some chestnut; lores and eye-stripe buff; ear-coverts brown and buff; chin, throat, breast, and belly yellow, much obscured by greyish-buff fringes; flanks more buff and streaked; vent and under tail-coverts pale buff; axillaries white or buffish-white; tail and wing-feathers as male, but browner, not so dark; inner secondaries and greater coverts black and brown, fringed and tipped pale buff; median coverts black, tipped whitish-buff; lesser coverts with narrow buffish-grey tips. *Summer*.—Moult as in male, new feathers of crown being marked chestnut and of chin being buffish-white. Abrasion has little effect compared with male, but chestnut shows more on rump, and occasionally ill-defined chestnut breast-band is revealed by wearing off of tips, and under-parts become purer yellow, not so buff.

Nestling.—(Not examined.)

Juvenile.—Much as adult female, but fringes of feathers of crown and mantle paler, and rump more streaked; under-parts yellowish-buff; breast and flanks browner and finely streaked brown-black; axillaries buffish-white.

First winter. Male.—Much less chestnut on crown and rump than adult male; more like female on mantle and scapulars; under-parts paler yellow than adult male, and heavily washed buff as in female; chestnut breast-band almost concealed by buff tips

wing-coverts much as in female. The juvenile body-plumage and wing-coverts, and apparently innermost secondaries, are moulted in autumn but not rest of wings and tail. *Summer*.—Moult as in adult but fore-part of crown, ear-coverts, and throat never become so black; back of crown and rump not so uniform chestnut; mantle streaked brown and black, like female; under-parts paler yellow than adult, and breast-band narrower.

First winter and summer. Female.—Paler and less yellow on under-parts than adult female, and breast finely streaked as in juvenile.

Measurements and structure.—♂ wing 75-80 mm., tail 57-61, tarsus 18-22, bill from skull 11-12 (12 measured). ♀ wing 71-75. Primaries: 1st minute and hidden, 2nd to 4th usually equal and longest, 5th 2-3 mm. shorter, 6th 6-10 shorter; 3rd to 5th emarginated outer webs. Other structure as *E. citrinella*.

Soft parts.—Bill: upper mandible dark brown, lower pale brown; legs and feet pale brown; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. Male distinguished from all other British Buntings with yellow under-parts by chestnut crown and breast-band and in summer black chin. Juvenile distinguished from *E. citrinella* by buffish-brown rump, and from *E. cirrus* by white under wing-coverts and buffer, not so yellow, and less streaked under tail-coverts. Female not so streaked on breast as *E. cirrus* and *E. citrinella*, under wing-coverts white and under tail-coverts buffer, not so yellow. Also sixth primary not emarginated on outer web.

FIELD-CHARACTERS.—Compared with Yellow Bunting, darker crown, white wing-bar in flight, plain yellow underneath (not streaked) are distinctions in female. Males are very distinct by reason of dark chestnut upper-parts and very conspicuous white wing-bar in flight, apart from other characteristics (H. Lynes).

BREEDING-HABITS.—Nests in low bushes, on stumps, or sheltered by coarse vegetation; usually 2 or 3 ft. from ground. *Nest*.—Dead grasses, lined finer grass and few horsehairs. *Eggs*.—4-5, rarely 6; ground-colour generally green, occasionally stone-colour or olive, blotched and streaked with dark brown and ashy-grey blotches as shell-marks. Average of 52 eggs, 20.53×15.05 mm. *Breeding-season*.—From beginning June to early July. *Incubation*.—Period not known. Both sexes incubate. One brood.

FOOD.—Small coleoptera, insect larvæ; also seeds, rice, vegetable matter.

DISTRIBUTION.—*England*.—Three. Female, Cley (Norfolk) Sept. 21, 1905 (Saunders, *Bull. B.O.C.*, xvi, pp. 10-11). Female near Wells (Norfolk) Sept. 5, 1907 (F. G. Penrose, *Brit. B.*, i, p. 263). Cley, Sept. 4, 1913 (E. C. Arnold, *op. c.*, vii, p. 170).

DISTRIBUTION.—*Abroad*.—North Russia and Siberia; on migration

in many tropical parts of Asia and casual in south and west Europe, Austria, Bohemia, Italy, south France, Malta, Heligoland.

EMBERIZA CIRLUS

47. *Emberiza cirlus* L.—THE CIRL BUNTING.

EMBERIZA CIRLUS Linnaeus, Syst. Nat., ed. xii, i, p. 311 (1766—S. Europe).
Emberiza cirlus Linnaeus, Yarrell, II, p. 50; Saunders, p. 211.

DESCRIPTION (Plate 5).—*Adult male. Winter.*—Fore-head and crown greyish olive-green, streaked black and tinged brown; back of neck with fewer dark streaks; mantle and scapulars chestnut, fringed greyish-buff, tips of feathers with black centres forming streaks; rump olive-brown, indistinctly streaked; upper tail-coverts rufous-brown with black shaft-streaks; stripes from base of bill over and under eye, fore-part of ear-coverts and spot behind them yellow; lores, upper and hinder part of ear-coverts greenish-black; chin and upper-throat black, tipped buffish-white; lower-throat and extending to sides of neck yellow; upper-breast greyish olive-green; sides of breast chestnut, tipped buff; centre of breast, belly, and under tail-coverts yellow, feathers tipped buffish-white, and long under tail-coverts with black shaft-streaks; flanks buff, streaked dark brown; axillaries yellow; tail black-brown, central pair fringed brown, rest very narrowly fringed greenish-brown on outer, and white on inner webs, outermost pair with outer web mostly white and large white wedge on inner web, penultimate pair with small white wedge; primaries black-brown very narrowly fringed greyish on outer, and white on inner webs; secondaries same, but outer webs fringed brown; inner secondaries and greater coverts broadly fringed chestnut-brown; median coverts tipped greyish-buff; lesser coverts greyish-green. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—Feathers of yellow stripes above and below eye and ear-coverts are moulted March and April, but apparently no other moult. Abrasion gradually makes crown more grey and black, mantle more chestnut, chin blacker, upper breast purer green, and sides of breast more chestnut.

Adult female. Winter.—Upper-parts much as male, but crown and nape browner and rather more streaked; mantle less chestnut; stripe over eye and spot behind ear-coverts ill defined, and buff, not yellow; ear-coverts yellowish-brown; chin and throat yellowish-buff, spotted dark brown; ill defined dark malar streaks; upper-breast and flanks darker, prominently streaked, sides of breast tinged chestnut; lower breast, belly, and under tail-coverts pale yellow, with few dark streaks; axillaries pale yellow; tail as male but white marks slightly smaller; wings as male. *Summer.*—Moult round eyes and ear-coverts, as in male. Abrasion makes crown and rump greyer; mantle more chestnut; eye-stripe rather more prominent; throat yellower and less spotted; upper-



H.G.

(9-10THS NATURAL SIZE.)

1, Yellow Bunting (*Emberiza c. citrinella*). 2, Cirl Bunting (*E. cirlus*). 3, Pine-Bunting (*E. leucocephala*). 4, Black-headed Bunting (*E. melanocephala*). 5, Yellow-breasted Bunting (*E. aureola*). 6, Ortolan Bunting (*E. hortulana*). 7, Meadow-Bunting (*E. c. cia*). 8, East Siberian Meadow-Bunting (*E. cioides castaneiceps*). 9, Little Bunting (*E. pusilla*). 10, Rustic-Bunting (*E. rustica*).

breast greyer and less streaked; chestnut on sides of breast more prominent.

Nestling.—(Not examined.)

Juvenile.—Whole upper-parts streaked black, feathers broadly margined pale buff or brownish-buff; under-parts pale yellowish-grey with black-brown streaks, thicker on breast and sides of throat, finer on flanks and smaller on chin, centre of throat, and belly; stripe over eye and sides of head yellowish-buff, spotted dark brown; tail and wing-feathers as adult; greater coverts edged and tipped buff; median coverts tipped duller buff than adult; lesser coverts black with very narrow buff tips.

First winter and summer.—Like adults and cannot be distinguished with certainty, but some females with browner and more streaked upper-breasts and browner crowns (especially noticeable in summer) may be first summer. The juvenile body-plumage and wing-coverts, innermost secondaries and sometimes middle pair of tail-feathers are moulted in Aug.-Oct., but not primary-coverts nor rest of wings and tail.

Measurements and structure.—♂ wing 76-83 mm., tail 65-73, tarsus 18-19, bill from skull 10.5-12 (12 measured). ♀ wing 71-80. Primaries: 1st minute and hidden, 3rd to 5th longest and equal, 2nd and 6th 2-4 mm. shorter; 3rd to 6th emarginated outer webs. Other structure as *E. citrinella*.

Soft parts.—Bill: upper mandible dark horn, lower bluish; legs and feet brownish-flesh; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. For differences of *E. citrinella* and *E. aureola* see under those species; cannot be confused with any other British Bunting.

FIELD-CHARACTERS.—In form, and to a large extent in behaviour, resembles Yellow Bunting. In appearance male easily distinguished by black throat, lores, and ear-coverts, and olive-grey band on chest, but female and young only with difficulty by brown rump—not chestnut as in Yellow Bunting. In winter often associates with small parties of Yellow Buntings and finches. Song, always in one tone, has been likened to Yellow Bunting's without final long-drawn "cheese," but is much more like loud rattling phrase of Lesser Whitethroat's. Often uttered from considerable elevation in elm or other tree, but in open country from top of bush, junipers being much affected. Call- and alarm-note "zit," much like Yellow Bunting's, but in a lower key.

BREEDING-HABITS.—Breeds in hedge-rows, gorse-bushes, brambles, and bank-sides, generally above ground, but also on it. *Nest*.—Bents, roots, much moss, and sometimes leaves in foundation; lined fine grasses and horsehair. *Eggs*.—3-5, very rarely 6, normally 4 in England. Ground-colour bluish or greenish in tint, and streaks and hair-lines almost black; bolder than in Yellow Bunting's eggs,

but rare varieties are barely distinguishable. Average of 100 eggs, 21.1×16.1 mm. *Breeding-season*.—Begins about mid-May, occasionally early in May, and lasts till Aug. or even Sept. *Incubation*.—Lasts about 12-13 days ($12\frac{1}{2}$ days, Raspail); by hen only. Two broods.

FOOD.—Chiefly corn and seeds of grasses and weeds; also insects (orthoptera, small coleoptera, larvæ of lepidoptera, etc.); young fed with insects (orthoptera, lepidoptera, etc.).

DISTRIBUTION—*England and Wales*.—Resident, but local, nesting in Somerset and coastal counties from Cornwall to Kent, scarcer Herts., Beds., Surrey, Berks., Bucks., Oxon, Wilts., Gloucester, Worcester, Hereford, Salop, and many counties of Wales, but not recorded nesting Pembroke, Carmarthen, Radnor, Merioneth, or Anglesey. Nests very rarely Essex, Middlesex, and Yorks. Elsewhere rare winter-straggler. *Scotland*.—Rare vagrant. Four or five. *Ireland*.—Rare vagrant. One seen Donegal Aug. 2, 1902 (H. E. Howard, *Zool.*, 1902, p. 353).

DISTRIBUTION.—*Abroad*.—Mediterranean countries generally: in small numbers in south-west Germany (Rhine, Moselle, Saar), generally distributed in France and locally common. The Corsican race has been separated, but this requires confirmation.

EMBERIZA HORTULANA

48. *Emberiza hortulana* L.—THE ORTOLAN BUNTING.

EMBERIZA HORTULANA Linnæus, *Syst. Nat.*, ed. x, i, p. 177 (1758—Europe. Restricted typical locality: Sweden).

Emberiza hortulana Linnæus, *Yarrell*, II, p. 57; *Saunders*, p. 213.

DESCRIPTION (Plate 5).—*Adult male*. *Winter*.—Crown and nape greyish olive-green, faintly streaked darker; back of neck uniform greenish-brown; mantle and scapulars boldly streaked black, with chestnut-brown marks and pale brown fringes; back, rump and upper tail-coverts yellowish-brown, with dark shaft-streaks; lores, orbital ring, chin, and throat pale yellow or buffish-yellow; ear-coverts, distinct malar stripe, sides of neck, and upper-breast greyish olive-green; rest of under-parts buffish- or yellowish-chestnut; axillaries and under wing-coverts pale yellow; tail black-brown, central pair broadly fringed chestnut-brown, outermost pair with large diagonal white band across both webs, penultimate pair with rather smaller white mark on inner web; primaries and secondaries brown-black, with outer webs narrowly edged yellowish-brown and inner webs greyish-white; innermost secondaries broadly fringed chestnut-brown; greater coverts edged and tipped buffish-brown; median coverts tipped same; lesser coverts tipped greyish-brown. This plumage is acquired by complete moult in early autumn: *Summer*.—No moult, abrasion makes crown and especially nape

and upper-breast greyer, less green, some specimens being much greyer than others.

Adult female. Winter and summer.—Like adult male but crown and sides of head tinged brownish; throat more buffish-yellow; upper-breast less green and with dark spots or small streaks.

Nestling.—(Not examined.)

Juvenile.—Whole upper-parts streaked brown-black, feathers margined buff or brownish-buff; throat and sides of head whitish-buff, rather sparsely streaked black-brown; breast darker and more heavily streaked; flanks same but with fine streaks; middle of breast, belly, and under tail-coverts almost uniform rufous-buff; tail and wings like adult but tips of wing-coverts paler and divided centrally by black-brown.

First winter and summer. Male.—Much like adult female but crown rather browner, with fine shaft-streaks; throat paler and less yellow, with few dark spots; upper-breast greyer, with more decided dark streaks. The juvenile body-plumage, wing-coverts and inner secondaries are moulted in Sept.-Oct., but not tail and rest of wing-feathers. *Female.*—Resembling first-winter male but crown brown and streaked as mantle, breast buffer and more heavily streaked and a few small streaks on flanks.

Measurements and structure.—♂ wing 85-92 mm., tail 64-71, tarsus 19-21.5, bill from skull 10-11.5 (12 measured). ♀ wing 80-88. Primaries: 1st minute and hidden, 2nd to 4th almost equal and longest, 5th 3-6 mm. shorter, 6th 10-14 shorter; 3rd to 5th emarginated outer webs. Other structure as in *E. citrinella*.

Soft parts.—Bill, legs, and feet brownish-red; iris brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. Brown, not chestnut, rump distinguishes it in all stages from *E. cia* and *E. cioides*, and chestnut or rufous-buff abdomen from all other British Buntings. *E. buchanani* (Persia, India, Turkestan) is very similar, but never with yellow on throat, and always greyer on crown and mantle.

FIELD-CHARACTERS.—Adults of both sexes readily recognized by their being rather light rufous underneath below the grey and yellow-green chest, not to mention the very small red bill and light yellowish-coloured "spectacle" round eye. In younger birds these are all characters which should be looked for, but it must be borne in mind that all the colours are duller, less distinctive (H. Lynes).

BREEDING-HABITS.—Breeds sometimes in corn- or rye-fields, or in ground overgrown with *Artemisia* and other weeds, on ground or near it, in growing vegetation. *Nest.*—Dead grasses, roots, etc., lined fine roots and hair. *Eggs.*—4-6; ground-colour bluish-white to pinkish or reddish-grey, with round spots and few streaks blackish-brown; exceptionally very lightly marked. Average of

100 eggs 19.73×15.29 mm. *Breeding-season*.—From beginning May in Spain, to beginning June in Finland, generally about mid-May. *Incubation*.—Period not precisely known, nor share of sexes. One brood.

FOOD.—Seeds (oats, millet, hemp, grasses, etc.), also insects (orthoptera, coleoptera, larvæ of lepidoptera, etc.) and snails.

DISTRIBUTION.—*England and Wales*.—Vagrant. A good many chiefly on east and south coasts in autumn (occasionally in small parties), but also in April, May, and June. *Scotland*.—At Fair Isle appears regularly on spring and autumn passages; at St. Kilda several noted Sept. 1910, and one Sept. 1911; at Isle of May several May 1885 and four autumn 1910; in Shetlands two, April 1898; in Orkneys several May 1913, two Sept. 1913; Aberdeen two, Nov. 1863. *Ireland*.—One somewhat doubtful record Clare, May, 1852.

DISTRIBUTION.—*Abroad*.—Europe generally (except in the high north), Mediterranean countries and west Asia.

EMBERIZA CIA

49. *Emberiza cia* L.—THE MEADOW- or ROCK-BUNTING.

EMBERIZA CIA Linnæus, Syst. Nat., ed. XII, i, p. 310 (1766—S. Europe. Restricted typical locality: Lower Austria).

Emberiza cia Linn., Sharpe, Bull. B.O.C., XIII, p. 38; Saunders, Brit. B., I, p. 13.

DESCRIPTION (Plate 5).—*Adult male*. *Winter*.—Centre of crown and nape blue-grey, finely streaked black and washed buffish-brown; line on each side of crown meeting on fore-head black (feathers edged brown); hind-neck almost uniform yellowish-brown (feathers with grey bases); mantle and scapulars chestnut-buff boldly streaked black; rump uniform chestnut; shorter upper tail-coverts same, long ones brown, with fine black shaft-streaks; stripe from bill over eye to base of neck and patch under eye ashy-white, tinged brown; malar stripe continuing round ear-coverts and joining stripe through lores and behind eye black; ear-coverts, sides of neck, chin, throat and upper-breast ashy blue-grey, tinged buff; lower-breast, flanks, belly, and under tail-coverts uniform buffish-chestnut; axillaries white; tail brown-black, central pair fringed buffish-brown, outer pair with outer webs mostly white and large wedge-shaped white marks on distal halves of inner webs, penultimate pair with smaller white wedges and next pair with small white tips; wing-feathers brown-black, inner webs narrowly edged whitish, outer webs of outer primaries same and of inner primaries and secondaries brown, innermost secondaries broadly fringed chestnut-brown; greater coverts same but tipped buffish-white; median coverts

tipped buffish-white; lesser tipped grey. This plumage is acquired by complete moult in early autumn. *Summer*.—No moult. Abrasion makes crown, sides of head and throat purer grey, buff tinge being worn off.

Adult female. Winter.—Like male but browner and more streaked crown; paler, not so chestnut, mantle; browner ear-coverts; throat and breast more tinged buff and faintly spotted; rest of under-parts rather paler than male. *Summer*.—Abrasion makes crown and ear-coverts greyer, approaching winter plumage of male, and spots mostly wear off throat and breast, which are always rather less pure grey than in male.

Nestling.—(Not examined.)

Juvenile.—Crown brownish-buff, streaked black; mantle more chestnut-brown and broadly streaked; rump and upper tail-coverts chestnut, finely streaked black; eye-stripe pale buff, speckled black; ear-coverts buffish-brown; throat buff and upper-breast and flanks rufous-buff, spotted and streaked black-brown; centre of breast, belly and under tail-coverts uniform buff; tail and wings as adult; greater and median wing-coverts with smaller buffish-white tips divided centrally by black-brown; lesser coverts browner, narrowly tipped dull grey.

First winter and summer. Male.—Like adult female but slightly greyer on crown and slightly more chestnut on mantle. The juvenile body-plumage and wing-coverts are moulted in early autumn but not rest of wings and tail. *Female*.—Like adult female, but crown buffish-brown, streaked black with only bases of feathers grey; eye-stripe inconspicuous buff; ear-coverts buffish-brown; throat and breast heavily washed buff and much speckled dark brown; flanks slightly streaked.

Measurements and structure.—♂ wing 81-85 mm., tail 73-78, tarsus 18-20, bill from skull 10-11.5 (12 measured). ♀ wing 75-81. Primaries: 1st minute and hidden, 3rd to 5th usually equal and longest, 2nd 3-6 mm. shorter, 6th 1-4 shorter; 3rd to 6th emarginated outer webs. Other structure as *E. citrinella*.

Soft parts.—Bill dark lead; legs and feet brownish-straw; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*E. c. africana* (north-west Africa) is rather paler on throat and under-parts with grey of throat not extending so far down breast, *E. c. par* (mid-Asia) larger, paler mantle, reddish-brown tips to median wing-coverts, *E. c. stracheyi* (Himalayas) darker upper- and under-parts, tips of median coverts as in *E. c. par*, *E. c. godlewskii* (east Siberia) larger, sides of crown chestnut, grey of crown and throat bluer. Except in juvenile ash-grey throat distinguishes it from all other British Buntings except *E. cioides castaneiceps*, which has chestnut ear-coverts. Juvenile only to be distinguished from juvenile *E. cioides castaneiceps* by whitish tips to median coverts (this

distinction is lost in other subspecies of *E. c. cia*); differs from juvenile *E. hortulana* by chestnut rump, and from all others in rufous-buff abdomen.

FIELD-CHARACTERS.—Chestnut body, grey head with triple black bands (above, through and below the eye) make it very distinctive. Scrub-clad, stony upland slopes are its natural habitat (H. Lynes).

BREEDING-HABITS.—Nests among stones on barren hillsides, sometimes low down in small bushes or loose stone walls. *Nest.*—Grasses and bark strips, little moss; lined fine roots and horsehair. *Eggs.*—4-6, ground-colour greyish-white or pale purplish-brown, with wreath of interlacing hair-lines round big end, few spots dark brown and ashy shell-marks. Average of 86 eggs, 20.63×16 mm. *Breeding-season.*—Begins early April: mostly in May or June at high altitudes. *Incubation.*—Period and share of sexes not precisely known. One brood.

FOOD.—Seeds (oats, millet, hemp, grasses, etc.), probably also insects.

DISTRIBUTION.—*England.*—Six. Two near Shoreham (Sussex) end Oct., 1902 (R. B. Sharpe, *Bull. B.O.C.*, XIII, p. 38). One seen Faversham (Kent) about Feb. 14, 1905 (C. J. Carroll, *Ibis*, 1905, p. 291). Two Ninfield (Sussex) April 1, 1910 (J. B. Nichols, *Brit. B.*, v, p. 50). Female, Westfield (Sussex), April 6, 1915 (*id.*, *op. c.*, XII, p. 89).

DISTRIBUTION.—*Abroad.*—Mediterranean countries generally, north to Rhine valley, Lower Austria and foot of Transylvanian Alps. Replaced by allied forms in north-west Africa and in various parts of Asia. Dr. Le Roi (*Orn. Monatsber.*, 1911, pp. 78, 79) has not only separated the north-west African form (*E. c. africana*), but also two in Europe, i.e., *E. cia cia* in Lower Austria, Switzerland, Bavaria and Rhine valley, and *E. cia barbata* Scop. from Krain, Tyrol, Wallis, Spain, Italy, Dalmatia, and south-east Europe. We do not know to which of these two forms (which require confirmation) the British specimens would belong.

EMBERIZA CIOIDES

50. *Emberiza cioides castaneiceps* Moore — THE EAST SIBERIAN MEADOW-BUNTING.

EMBERIZA CASTANEICEPS Moore, Proc. Zool. Soc. London, 1855, p. 215 (China).

Emberiza cioides Brandt, Saunders, p. 215.

DESCRIPTION (Plate 5).—*Adult male. Winter.*—Crown and nape dark pink-chestnut, feathers broadly edged brownish-buff; mantle and scapulars brown-chestnut, edged same and streaked black; rump and upper tail-coverts chestnut, narrowly tipped

buff; stripe from bill over eye to base of neck and patches under eyes and at sides of neck greyish-white; lores and malar stripe black; ear-coverts dark pink-chestnut; chin and throat extending to sides of neck pale ashy-grey; band on upper-breast dark pink-chestnut, broadly tipped buff; flanks chestnut-buff; centre of breast and belly and under tail-coverts pale buff; axillaries white; tail: central pair chestnut with black shaft-streaks, rest black narrowly edged brown, outermost pair with large wedge of white on distal two-thirds, penultimate pair with smaller wedge and next pair usually with very small white tip; wing-feathers black, narrowly edged chestnut on outer, and white on inner webs; innermost secondaries, greater and median coverts with broad chestnut margins and tips with narrow outer fringe of buff; lesser coverts tipped grey. This plumage is acquired by complete moult in Sept.-Oct. *Summer*.—A moult confined to chin, ear-coverts and lores takes place from March to May, but does not seem to occur in all individuals. Abrasion makes fore-head blackish, crown and breast-band and mantle less buff more chestnut-brown.

Adult female. Winter and summer.—Like male but crown and nape browner with very little chestnut; mantle, inner secondaries, wing-coverts, and rump browner less chestnut; ear-coverts tinged buff; throat less pure ashy-grey; breast-band browner and less defined; flanks paler.

Nestling.—(Not examined.)

Juvenile.—Like that of *E. c. cia*, and only to be distinguished from it by tips of median coverts which are buff, not whitish; edgings of wing and central tail-feathers rather more chestnut but scarcely distinguishable.

First winter. Male.—Apparently same as adult. The juvenile plumage is completely (including wings and tail) moulted in Sept.-Oct. *Female*.—Crown and nape decidedly browner than adult female, with scarcely any chestnut; eye-stripe and under eye buff; dark brown specks on lores and malar stripe black-brown and ill-defined; chin and throat greyish-buff; breast and flanks buffer and paler. *Summer*.—A moult takes place as in adults. In the female the new feathers of chin are greyer than old, but still more tinged with buff than in adult females.

Measurements and structure.—♂ wing 75-84 mm., tail 72-81, tarsus 18-20, bill from skull 9-10.5 (12 measured). ♀ wing 69-80. Primaries: 1st minute and hidden, 3rd to 5th usually longest, 2nd 2-5 mm. shorter, 6th 2-3 shorter. Other structure as *E. citrinella*.

Soft parts.—Bill dark horn, under mandible paler; legs and feet pale reddish-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*E. c. cioides* (west Siberia, Turkestan) has longer wing and tail and paler edgings to feathers of mantle, *E. c. ciopsis* (Japan) has blackish ear-coverts. For specific characters see under *E. cia*.

FIELD-CHARACTERS.—Large chestnut patch on ear-coverts showing up clearly against grey of head distinguishes it from *E. cia*. A more bush- and lowland-loving bird; Meadow-Bunting is as appropriate a name for this species as “Rock-Bunting” would be for *E. cia* (H. Lynes).

BREEDING-HABITS.—Nests under tussock by bush or small rock, sometimes in sapling pines, near ground. *Nest.*—Of twigs, leaves, grasses and fern, lined fine grass and hair. *Eggs.*—3-6, usually 4-5; ground-colour creamy to pale purplish-grey, with wreath of brown hair-lines in zone and generally some dark streaks and spots and bluish shell-marks. Average of 16 eggs 20.61×15.78 mm. *Breeding-season.*—From mid-May to June and probably July. *Incubation.*—Period and share of sexes not known. Probably two broods.

FOOD.—Seeds and probably insects.

DISTRIBUTION.—*England.*—One caught alive Flamborough Cliffs (Yorks.) Nov., 1886 (*cf. Ibis*, 1889, pp. 293-294 and 296).

DISTRIBUTION.—*Abroad.*—East Siberia, Manchuria, and Corea, wintering in China. Casual in Italy. Replaced by *E. c. cioides* in west Siberia, and by *E. c. ciopsis* in Japan.

EMBERIZA RUSTICA

51. *Emberiza rustica* Pall.—THE RUSTIC-BUNTING.

EMBERIZA RUSTICA Pallas, Reise d. versch. Prov. d. Russ. Reichs, III, p. 698 (1776—Transbaikalia).

Emberiza rustica Pallas, Yarrell, II, p. 29; Saunders, p. 217.

DESCRIPTION (Plate 5).—*Adult male.* *Winter.*—Fore-head and crown brown-black, much obscured by broad fringes and tips of rufous-brown and buff; spot in centre of nape white, tinged buff; back of neck, rump and upper tail-coverts chestnut, tipped buff (longest upper tail-coverts browner); mantle chestnut, broadly fringed buff and mesially streaked black; scapulars same but usually with narrower black streaks; lores brownish-buff; stripe over and behind eye buffish-white; under eye and ear-coverts brown, buff and black; throat extending to sides of neck behind ear-coverts buffish-white with broken dusky-black malar stripes, and generally a few brown flecks on throat; breast-band and flanks chestnut, fringed buff or buffish-white and upper feathers of breast-band more or less marked black (sometimes black is quite absent); rest of breast, belly, under tail-coverts, and axillaries white tinged buff; tail: central pair brown narrowly fringed buff and with black shaft streaks, outermost pair with large wedge of white occupying most of feather and extending to base, penultimate pair with similar but narrower wedge on inner web, rest brown-black with outer webs fringed buff; primaries

brown-black fringed greyish-white inner, and pale brown outer webs; secondaries same but outer webs fringed darker brown, inner secondaries margined chestnut with outer fringe of buff and a tongue-like projection of black and chestnut about centre of outer web; inner greater coverts like inner secondaries but outer ones tipped white and fringed buff; median coverts with larger white tips; lesser coverts chestnut tipped buff. This plumage is acquired by complete moult in August. *Summer*.—A moult confined to head and throat takes place in April and May (sometimes March), when small patch of black appears on chin; whole throat including malar region, stripe over and behind eye and nape-spot become pure white; lores, ear-coverts, fore-head, and crown jet-black; some feathers of upper-part of breast-band are renewed but moult does not extend further; abrasion of tips and fringes of feathers causes rest of breast-band, back of neck, rump and flanks to become more uniform chestnut and mantle more strongly streaked black. N.B.—Moult of head is not always quite complete, some old brown-tipped feathers being frequently left on crown and ear-coverts.

Adult female. Winter.—Differs from male in having more buff and brown and less black on crown and ear-coverts; whitish-buff nape-spot scarcely observable; back of neck, mantle and wings browner and less chestnut; breast-band much less well-defined and broken and often with some dark brown streaks, less chestnut on flanks. *Summer*.—Moult of head takes place in April as in male but new feathers are much like old, but lores, ear-coverts and crown have rather more black and head much resembles male in winter.

Nestling.—(Not examined.)

Juvenile.—Crown brownish-black, feathers edged pale buff; nape and mantle with more rusty-buff edgings and with some rufous in centres; rump and upper tail-coverts rusty-chestnut with dark centres; lores and stripe behind eye pale buff; ear-coverts buffish-brown; chin uniform buff; throat more whitish streaked blackish-brown; breast and flanks more tawny and more heavily streaked same; centre of lower-breast whitish-buff with blackish spots; centre of belly and under tail-coverts uniform whitish-buff; tail- and wing-feathers as adult; lesser wing-coverts dull chestnut tipped buff; median coverts brown-black with buffish-white tips centrally divided with brown; greater coverts same but tips more buff.

First winter and summer. Male and female.—Like adults, very difficult to distinguish, but males in winter appear to have less black on crown and ear-coverts than adults. The juvenile body-plumage and wing-coverts are moulted in August but not primary-coverts, remiges and rectrices.

Measurements and structure.—♂ wing 75-81 mm., tail 56-63, tarsus 18-19, bill from skull 11-12 (12 measured). ♀ wing 72-76.

Primaries: 1st minute and hidden, 3rd and 4th equal and longest, 2nd and 5th usually 1-3 mm. shorter but occasionally equal, 6th 5-7 shorter; 3rd to 6th emarginated outer webs. Other structure as *E. citrinella*, but palatal knob scarcely observable.

Soft parts.—Bill brown and base of lower mandible flesh; legs and feet reddish-flesh; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. Distinguished from *E. cia* and *E. cioides* by white abdomen, from *E. leucocephala* by chestnut lesser wing-coverts and smaller size, and adults from all other British Buntings by combination of chestnut rump, breast-band, and streaks on flanks. For differences of *E. pusilla* see under that species.

FIELD-CHARACTERS.—Bright rusty breast-band of large spots as well as similar spots on flanks show up distinctly on silky white under-parts and make it readily distinguishable from other Buntings (H. Lynes).

BREEDING-HABITS.—Breeds on or near ground in bushes or rank grass in swampy forest. *Nest*.—Built of grasses and bents. *Eggs*.—4-5, occasionally 6, ground-colour greenish-grey to bluish-green, spotted and blotched thickly with greyish-olive and violet shell-marks, but no streaks. Average of 43 eggs, 20.36×15.12 mm. *Breeding-season*.—From end May to July. *Incubation*.—Period and share of sexes unknown. One brood.

FOOD.—Seeds; young said to eat oats and other grain.

DISTRIBUTION.—*Great Britain*.—Six England, seven Scotland. *England*.—One near Brighton (Sussex) Oct. 23, 1867. One Holder-ness (Yorks.) Sept. 17, 1881. One Elstree (Herts.) Nov. 19, 1882 (Saunders, p. 217). One Westfield (Sussex) Sept. 22, 1902. One near Seaton Sluice (Northumberland) some time previous to Dec., 1904. One *seen* Lincs. (*cf. Brit. B.*, I, pp. 248-9) One Westfield (Sussex) Dec. 4, 1914 (*op. c.* IX, p. 92). *Scotland*.—Pair Torphins (Aberdeen) end March, 1905. Male Cape Wrath (Sutherland) May 11, 1906 (*cf. op. c.*, I, p. 249). Female adult June 18, young Sept. 22, 1908, male adult Sept. 29, 1909, Fair Isle (*Studies Bird Migration*, II, p. 114). Male adult May 30, 1913, Fair Isle (*Scot. Nat.*, 1914, p. 54).

DISTRIBUTION.—*Abroad*.—From east Finland throughout Siberia to Kamtschatka. On migration through Manchuria and Mongolia to Japan, China, Turkestan, casual in Europe (Sweden, Austria, Germany, Heligoland, south France, Italy, Holland), and Alaska.

EMBERIZA PUSILLA

52. *Emberiza pusilla* Pall.—THE LITTLE BUNTING.

EMBERIZA PUSILLA Pallas, Reise d. versch. Prov. d. Russ. Reichs, III, p. 697 (1776—Transbaikalian Alps).

Emberiza pusilla Pallas, Yarrell, II, p. 34; Saunders, p. 219.

DESCRIPTION (Plate 5).—*Adult male. Winter.*—Centre of crown and nape chestnut and sides black (forming two black stripes) all much obscured by long buff fringes; back of neck, rump, and upper tail-coverts chestnut-brown, feathers with dark centres and buffish edgings; mantle and scapulars more broadly streaked black and marked chestnut; lores, stripe over and behind eye and ear-coverts pinkish-chestnut; chin and throat same tipped buff, with broken black malar stripes; small black patches behind and under ear-coverts; breast and flanks pale buff boldly streaked black; centre of belly and under tail-coverts buffish-white; axillaries white with dusky centres; tail brown-black margined brown, outer pair with large white wedge extending nearly to base, penultimate pair with narrow white line on inner web along shaft, rest narrowly fringed buffish on outer webs; primaries brown-black, inner webs fringed pale buff, outer webs fringed pale brown; secondaries same, but outer webs fringed chestnut-brown and inner secondaries broadly margined same with outer fringe of buff and black "tongue" about centre of outer web; greater coverts fringed and tipped rufous-buff; median coverts tipped pale buff; lesser coverts buffish-brown. This plumage is acquired by complete moult from July to Sept. *Summer.*—A moult confined to lores, line over eye, ear-coverts, chin and throat takes place from February to April, new feathers of these parts being rather deeper in colour. Abrasion of tips and fringes of feathers makes centre of crown uniform chestnut with broad black stripes on each side; mantle more boldly streaked black and marked chestnut; under-parts whiter and black streaks bolder.

Adult female. Winter.—Like adult male but lores, eye-stripe and ear-coverts paler, black stripes on sides of crown not so pronounced, and chin and throat more yellowish-buff, occasionally pinkish. *Summer.*—Moult and abrasion as in male, after which becomes very difficult to distinguish, but black stripes on sides of crown are more broken with brown.

Nestling.—Specimens nearly feathered have long dark brown tufts of down on occipital, humeral, ventral, and crural tracts.

Juvenile.—Upper-parts heavily streaked black, feathers of sides of crown fringed chestnut, those of centre of crown and nape pale buff, those of mantle yellowish-buff and chestnut, those of rump browner-buff; lores and ear-coverts chestnut-buff, latter streaked black; stripe over eye paler buff; chin whitish-buff; throat, sides of neck and breast heavily streaked black, feathers with pale buff or white edgings; flanks buffish-white finely streaked; centre of belly and under tail-coverts same but unstreaked; tail, wings, and wing-coverts as adult.

First winter. Male and female.—Like adult female but lores and eye-stripe pale buff with only slight chestnut tinge, and chin and throat buffish-white. The juvenile body-plumage and wing-coverts are moulted in July and Aug. but not primary-coverts,

remiges and rectrices. *Summer*.—After moult becoming more like adults but chin and throat apparently less dark and often whitish.

Measurements and structure.—♂ wing 68-74 mm., tail 53-59, tarsus 17-18, bill from skull 9-10 (12 measured). ♀ wing 64-67. Primaries: 1st minute and hidden, 3rd and 4th usually equal and longest, 2nd and 5th sometimes equal usually 1-2 mm. shorter, 6th 4-7 shorter; 3rd to 6th emarginated outer webs. Other structure as *E. citrinella* but palatal knob scarcely observable.

Soft parts.—Bill blackish-brown, lower mandible pale brown; legs and feet pale brown; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. Uniform chestnut lores and ear-coverts, browner rump, and brown lesser wing-coverts distinguish it from *E. schoeniclus*; in juvenile plumage its chestnut-buff lores and ear-coverts are best character, and these, combined with heavy black streaks on breast and brown, not chestnut, rump and lesser wing-coverts, distinguish it from *E. rustica* at all ages.

FIELD-CHARACTERS.—A dull-looking little bird, distinctly smaller than Reed-Bunting. With field-glasses, rufous sides of face should always be looked for. In addition to its smaller (slimmer) appearance, readily distinguished from Rustic-Bunting by its duller under-parts, with fine black streaks (H. Lynes).

BREEDING-HABITS.—Breeds in depressions of ground in willow swamps and forest clearings, also in dwarf willow scrub on tundra. *Nest*.—Among dead leaves, moss, and grass, lined few reindeer hairs and fine grasses. *Eggs*.—4-5, rarely 6, very variable, ground-colour, greenish, pinkish-grey or brownish, spotted, blotched and scrawled dark brown, or reddish-brown, with violet-grey shell-marks. Average of 33 eggs, 18.28×13.94 mm. *Breeding-season*.—Latter part of June. *Incubation*.—Period and share of sexes unknown. One brood.

FOOD.—Seeds; also insects in summer (coleoptera, etc.).

DISTRIBUTION.—*British Isles*.—About seven England, many Scotland, and one Ireland. *England*.—One Brighton (Sussex), Nov. 2, 1864 (Saunders, p. 219). One Teesmouth (Durham) Oct. 11, 1902. One near Rugby (Warwick) Oct., 1902. One Dover (Kent), Nov. 16, 1907. One, supposed, Southend (Essex), Nov., 1892. One Cley (Norfolk), Oct. 19, 1908. One Whitby (Yorks.), Oct. 6, 1913 (*cf. Brit. B.*, I, pp. 249, 383, 385; II, p. 238; VII, p. 196). *Scotland*.—Fair Isle (Shetlands): observed in recent years (since 1905) almost regularly in small numbers in autumn (Sept.-Oct.) and three times in spring (April 14, 1907; May 12, 1908; May 18, 1909). Orkneys: Pentland Skerries, one Oct. 15, 1903, one Oct. 12, 1915, one Sule Skerry, Sept. 22, 1908, one Auskerry, Sept. 21, 1913. St. Kilda (O. Hebrides), two Sept. 15,

1911. Isle of May, one Sept. 25, and one Sept. 26, 1909, two or three Sept. 28, 1912, one Oct. 8, 1913. *Ireland*.—One Rockabill Lt. (Dublin), Oct. 2, 1908 (*op. c.*, II, p. 238).

DISTRIBUTION.—*Abroad*.—North Russia and Siberia to Turkestan. In winter further south in Asia, and not rarely in Europe: east Germany, south Sweden, Holland, Belgium, Heligoland, Austria, Italy, south France, Malta, and Algeria.

EMBERIZA SCHÆNICLUS

53. *Emberiza schœniclus schœniclus* (L).—THE REED-BUNTING.

FRINGILLA SCHÆNICLUS Linnæus, *Syst. Nat.*, ed. x, i, p. 182 (1758—Europe. Restricted typical locality: Sweden).

Emberiza schœniclus Linnæus, *Yarrell*, II, p. 23; *Saunders*, p. 221.

DESCRIPTION.—*Adult male.* *Winter*.—Fore-head and crown black, mostly obscured by long buffish- or rufous-brown tips to the feathers; back of neck white, mostly obscured by brown tips; mantle and scapulars boldly streaked black, margined rufous-brown and fringed buff; rump ashy-grey, feathers with blackish shaft-streaks and long rufous-brown tips; upper tail-coverts same but rather browner; lores buff; ear-coverts as crown; chin and throat extending on to centre of upper-breast same but tips smaller and usually paler buff; malar stripes and sides of neck white, tinged buff; sides of breast and flanks same but with narrow black and reddish-brown streaks; centre of breast, belly, under tail-coverts and axillaries white; tail: central pair mostly brown with mesial black line and outer webs chestnut-brown, rest black narrowly edged brown, outermost pair with large wedge of white occupying most of feather, penultimate pair with smaller wedge on distal half of inner web; primaries and secondaries brown-black, inner webs fringed white and outer webs bright bay; inner secondaries and greater coverts broadly margined and tipped same with outer fringe of buff; median coverts tipped bright bay; lesser coverts bright bay. This plumage is acquired by complete moult from Aug. to Nov. *Summer*.—A moult confined to chin, upper throat, lores, ear-coverts, and usually fore-head, takes place from March to May. Before this moult crown, throat and ear-coverts have become much blacker by abrasion of tips of feathers but lores never become black before moult. New feathers are entirely black except those of malar stripes which are white, but generally some old feathers remain so that throat and ear-coverts do not become uniform black until tips are entirely worn off old winter feathers. Abrasion of tips gradually makes crown uniform black, back of neck white forming a collar, mantle much blacker, rump greyer, sides of neck and breast and belly whiter without tinge of buff.

Adult female. Winter.—Similar to adult male but feathers of crown buffish-brown with black centres, sides of crown more chestnut-brown; back of neck with no white visible; rump much browner less grey; stripe over and behind eye buff; ear-coverts rufous-brown mixed with blackish; chin and throat buff with black and reddish-black malar stripes; breast and flanks same streaked black and reddish-brown; rest of under-parts more buff than male. *Summer.*—Moult in same regions and time as male, but apparently less complete, and new feathers coloured much as old ones. Abrasion gradually makes crown darker but never uniform black, narrow greyish-white collar at back of neck appears in much worn specimens, rump becomes rather greyer, streaks on breast and flanks more prominent and under-parts whiter but not pure white as in male.

Nestling.—Down sooty-black; fairly long and abundant; distribution, inner supra-orbital, occipital, humeral, ulnar, spinal, femoral, crural, and ventral (very sparse and sometimes absent). Mouth, inside deep pink, spurs and tip of tongue whitish, no spots; externally, flanges yellowish-white.

Juvenile.—Like adult female but more boldly streaked upper-parts with feather edges paler, whitish or yellowish-buff; rump and upper tail-coverts buff with black centres; under-parts yellowish-buff, especially throat and breast, latter and flanks streaked and spotted black, centre of belly whitish unstreaked; greater and median wing-coverts with smaller and paler fringes and tips than in adult female.

First winter. Male.—Like adult but with longer buff tips to feathers of crown; less white on feathers of back of neck, often a buff stripe over and behind eye; ear-coverts browner; throat with longer buff tips to feathers, and those of chin usually entirely buff without black, and those of lower throat usually marked rufous and black not extending so far on to breast. The juvenile body-plumage and wing-coverts are moulted in Aug.-Sept. but not remiges and rectrices. *Summer.*—Same moult as in adult but generally more complete in regions affected and consequently difficult to distinguish from adult in summer except by narrower and more spotted white collar and black less extended on breast.

First winter and summer. Female.—Like adult but still browner crown, no white on back of neck, more streaked breast and flanks.

Measurements and structure.—♂ wing 76-82 mm., tail 61-67, tarsus 20-22, bill length from skull 9.5-11, depth at nostrils 5-6 (12 measured). ♀ wing 70-77. Primaries: 1st minute and hidden, 3rd to 5th longest, 2nd 2-5 mm. shorter, 6th 1-3 shorter; 3rd to 6th emarginated outer webs. Other structure as *E. citrinella*.

Soft parts.—Bill dark brown, blackish along top of upper mandible; legs and feet dark brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*E. s. canneti* (south-east Europe)

has longer and thicker bill, but not so thick as in *E. palustris* and *pyrrhuloides*, *E. s. pallidior* (Baikal) is paler on upper-parts, as is *E. s. pyrrhulinus* (Japan), which also has a rather thicker bill. Differs from *E. palustris* and *E. pyrrhuloides* in its thin and flattish upper mandible. For differences of *E. rustica*, *E. pusilla* and *E. leucocephala*, see under those species.

FIELD-CHARACTERS.—Black head and throat and white collar of male conspicuous characters, whilst brown head, buff throat, pale buff eye-stripe and white outer tail-feathers (constantly displayed) identify female. Being frequenter of reed-beds and swampy places, is more restricted in habitat than other resident Buntings. First flocks of returning migrants in early spring, often associated with Pied Wagtails and Meadow-Pipits, usually consist of males exclusively. Song a stammering “zip, zip, zizee,” uttered apparently with difficulty. Call-note a harsh, long-drawn “tschee.”

BREEDING-HABITS.—Breeds generally in marshy ground, in tussocks, osier stumps, etc., on or near ground. *Nest.*—Chiefly bents, a little moss, lined finer grasses, horsehair, sometimes reed-flowers. *Eggs.*—4 to 5 normally, occasionally 6, rarely 7, ground brownish-olive, occasionally greenish or buff, rarely bluish-white without markings, but normally with few bold streaks and spots deep blackish-brown, and ashy-grey shell-marks. Edges of spots suffused brown. Average of 172 eggs 19.32×14.43 mm. *Breeding-season.*—Begins late April, but most eggs laid May. Two or even three broods: fresh eggs in June and July. *Incubation.*—13-14 days, chiefly by hen, but cock also takes part.

FOOD.—Chiefly seeds of marsh plants, grasses, and grain, also small mollusca and crustacea, and in spring and summer insects and larvæ (coleoptera, lepidoptera, neuroptera and hemiptera such as *Notonecta glauca*).

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed throughout, but only rare visitor to Shetlands, though in Fair Isle appears to be of double passage; breeds sparingly Orkneys and O. Hebrides.

MIGRATIONS.—*British Isles.*—Majority of home-bred birds emigrate Sept. and Oct., and return mid-March to mid-April. Numbers arrive east coast from Continent fourth week Sept. to fourth week Oct. (extremes Sept. 20 to Oct. 26). Many of these spread over the country as winter-visitors, many passing down east coast during October. Return movement late March to mid-May (extremes March 8 to May 28). Southward weather migrations occasionally Dec. to Feb., and emigration from south coast. Occasional records of movement from north coast lights late Oct. and mid-April. Some Irish birds appear to emigrate.

DISTRIBUTION.—*Abroad.*—Europe generally, but absent (except on

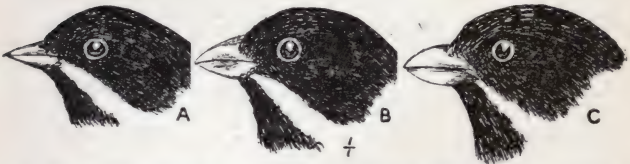
migration) or rare in south-eastern Europe, eastwards to Siberia. In winter in south Europe, Asia Minor, in small numbers in north Africa, in Asia as far south as Punjab in north-west India. Replaced by a number of allied forms in south-east Europe and central Asia.

EMBERIZA PALUSTRIS

54. *Emberiza palustris palustris* Savi—THE WESTERN LARGE-BILLED REED-BUNTING.

EMBERIZA PALUSTRIS Savi, Orn. Toscana, II, p. 91 (1829—"Toscana").
Emberiza pyrrhuloides palustris Savi, M. J. Nicoll, Bull. B.O.C., XXI, p. 104; *id.*, Brit. B., II, p. 88.

Emberiza palustris palustris Savi, Hartert, Brit. B., VI, p. 154.



A. Reed-Bunting (*Emberiza s. schœniclus*); B. Western Large-billed Reed-Bunting (*Emberiza p. palustris*); C. Eastern Large-billed Reed-Bunting (*Emberiza p. tchusii*).

DESCRIPTION.—Easily distinguished from *E. s. schœniclus* by large size and thick bill but in coloration scarcely different, though in winter male is slightly more tawny-buff on under-parts and female especially so, and streaks on breast and flanks more reddish. Moults and abrasion as in *E. s. schœniclus*.

Measurements and structure.—♂ wing 78-85 mm., tail 67-70, tarsus 19-21, bill length from skull 10.5-11.5, depth at nostrils 6.5-8 (8 measured). ♀ wing 75-79. Wing-formula as *E. s. schœniclus*. Bill thick and deep, upper mandible considerably deeper than lower, and high and arched curving to tip, not flattish and straight as in other Buntings, lower mandible also thick.

CHARACTERS AND ALLIED FORMS.—High, arched bill distinguishes it from *E. schœniclus*; forms of *E. pyrrhuloides* have still thicker bills and are usually paler in colour on upper-parts.

BREEDING-HABITS.—Breeds in marshes, reed-beds and swamps, on or near ground. *Nest.*—Similar to Reed-Bunting's. *Eggs.*—4 or 5, like Reed-Bunting's, but slightly larger, and more boldly marked. *Breeding-season.*—May. *Incubation.*—No details.

FOOD.—Seeds of water plants and insects.

DISTRIBUTION.—*England*.—Two. Male, near Lydd (Kent), May 26, 1908 (*ut supra*). Male, Filsham (Sussex), Jan. 6, 1915 (H. W. Ford-Lindsay, *op. c.*, ix, p. 120).

DISTRIBUTION.—*Abroad*.—Italy, Sicily, south France, and east Spain. Allied form *E. p. tschusii* see below, another (*E. p. othmari*), in Greece.

55. *Emberiza palustris tschusii* Reiser and Almasý—THE EASTERN LARGE-BILLED REED-BUNTING.

EMBERIZA SCHENICLUS TSCHUSII Reiser and Almasý, *Aquila*, v, p. 122-25 (1898)—Typical locality: Dunavat, Dobrudscha).

Emberiza palustris tschusii Reiser and Almasý, E. Hartert and J. B. Nichols, *Brit. B.*, vi, p. 153.

DESCRIPTION.—Like *E. p. palustris*, but mantle, scapulars and edgings of tail- and wing-feathers and coverts much paler sandy-buff; back, rump and upper tail-coverts paler more ashy-grey (in young female pale sandy-buff); grey patch below white collar on back of neck; male less streaked on flanks and female on breast and flanks; in winter also less tawny-buff on breast and flanks than *E. p. palustris*.

Measurements and structure.—♂ wing 79-86 mm., tail 70-75, tarsus 19-22, bill length from skull 10-11.5, depth at nostril 6.5-8 (10 measured); structure as in *E. p. palustris*, but bill usually very slightly finer.

BREEDING-HABITS.—Breeds in the great reed-beds of Lower Danube.

Nest.—Like that of preceding, but precise details of habits and eggs unobtainable.

FOOD.—Also similar.

DISTRIBUTION.—*England*.—One. Male, Rye (Sussex), April 23, 1912 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Delta of the Danube and southern Russia to Lenkoran on the Caspian Sea.

Genus *CALCARIUS* Bechst.

CALCARIUS Bechstein. *Orn. Taschenb. Vög. Deutschl.* i, p. 130 (1803—Type by monotypy *C. lapponicus*).

Very closely allied to *Emberiza*, but wings longer and generally more pointed, hind claw nearly straight, about equal to or longer than hind toe; claws of front toes rather flat. Three first visible primaries about equal and longest. Only one form in arctic and subarctic regions of Old and New World, but represented by a subspecies in Kamtschatka and Commander Islands, and another in Alaska.

CALCARIUS LAPPONICUS

56. *Calcarius lapponicus lapponicus* (L.)—THE LAPLAND BUNTING.

FRINGILLA LAPPONICA Linnæus, Syst. Nat., ed. x, i, p. 180 (1758—Lapland).

Plectrophanes lapponicus (Linnæus), Yarrell, II, p. 15; *Calcarius lapponicus* (Linnæus), Saunders, p. 223.



Lapland Bunting (*Calcarius l. lapponicus*). ♂ spring.

DESCRIPTION.—*Adult male. Winter.*—Crown black almost entirely concealed by long buff and brown tips to the feathers; broad band at back of neck extending on to sides of neck chestnut, much concealed by buff tips; mantle, scapulars, back, rump and upper tail-coverts streaked black and chestnut-brown, feathers broadly edged and tipped sandy and whitish-buff; lores whitish; stripe over and behind eye sandy-buff; ear-coverts same but partly marked black; between ear-coverts and chestnut band a buffish-white patch; cheeks, indistinct malar stripes and lower throat black, much concealed by buffish-white tips to feathers; chin, centre of throat, breast, belly and under tail-coverts buffish-white; flanks heavily streaked black and chestnut-brown; axillaries white; tail-feathers black-brown edged buff, outer pair with most of outer web buffish-white and large wedged-shaped buffish-white mark on inner web, penultimate pair with smaller buffish-white wedge on inner web; primaries and secondaries black-brown narrowly edged buff or whitish-buff on outer and inner webs, inner secondaries broadly edged chestnut-brown on outer webs and tipped whitish; greater coverts same but with more distinct white tips; median coverts more buff or buffish-white less chestnut; lesser coverts tipped and edged buff. This plumage is acquired by complete moult in August. *Summer.*—A moult confined to lores, fore-head, ear-coverts, chin and upper throat takes place in April, new feathers of these parts being jet-black. Abrasion of pale tips of feathers gradually makes rest of crown and base of throat uniform black; band at back of neck uniform bright orange-chestnut; mantle, back and rump much darker—black

and chestnut-brown with narrow buff edgings; eye-stripe becomes much more prominent and whiter and extends in a broken line nearly to base of bill; breast and belly purer white.

Adult female. Winter.—Like adult male but with much less black on crown; chestnut band at back of neck ill-defined and scarcely noticeable, feathers being streaked black, edged and tipped buff and only slightly marked pale chestnut; black on sides of head, lower throat and upper breast browner often mixed with tawny, not so extensive and almost concealed by buff fringes; streaks on flanks narrower and more chestnut-brown. *Summer.*—Same parts are affected by moult as in male but it is less complete, and new feathers are much like old, but those on sides of head and throat with more black at bases. Abrasion of tips of these and old feathers makes sides of throat and lower throat blackish but always with some whitish tips; crown becomes darker but never uniform black as in male; band at back of neck becomes pale chestnut spotted and streaked black; rest of upper-parts much as male.

Nestling.—(Not examined.)

Juvenile.—Whole upper-parts broadly streaked black, slightly marked chestnut-brown on crown and scapulars, and all the feathers edged buffish-yellow; sides of head as upper-parts, but ear-coverts rather browner and a white spot behind them; chin and upper throat whitish-buff spotted brown-black; lower throat, upper breast and flanks buffish-yellow narrowly streaked same; rest of under-parts whitish-buff; tail, wings and greater coverts as adults; median coverts with white tips divided centrally black; lesser coverts fringed white.

First winter. Male.—Like adult male but chestnut band at back of neck with minute black spots. The juvenile body-plumage and lesser and median wing-coverts are moulted in Aug.-Sept. but not rest of wing-feathers and tail. *Summer.*—Like adult and with same moult, but crown and throat do not become so uniform black, and chestnut band at back of neck is spotted as in first winter.

First winter. Female.—Like adult female but with little black on feathers of sides of head and malar stripe; feathers of upper breast and lower throat only streaked black and tawny, not with large dark centres. *Summer.*—After moult as adult, but unmoulted feathers of upper breast are streaked instead of with blackish centres.

Soft parts.—Bill yellow, tips black; legs and feet and iris dark brown.

Measurements and structure.—♂ wing 88-96 mm., tail 61-67, tarsus 19-23, bill from skull 10-11.5 (12 measured). ♀ wing 83-93. Primaries: 1st minute and hidden, 3rd longest, 2nd and 4th often as long but sometimes 1-2 mm. shorter, 5th 6-8 shorter; 3rd and 4th clearly, and 5th slightly, emarginated outer webs. Secondaries

between 8th and 10th primaries, tips square. Tail slightly forked. Bill rather broad at base tapering sharply to point, under mandible as *E. citrinella*, upper thicker than under and rather wider, cutting edges slightly overhanging. Nostrils bare. A few small rectal bristles. Hind claw rather longer than hind toe and only slightly curved, somewhat Lark-like.

CHARACTERS AND ALLIED FORMS.—*C. l. coloratus* (Kamtschatka) is darker and more rufous on upper-parts, while *C. l. alascensis* (Alaska) is decidedly paler than typical form. Long Lark-like hind claw and comparatively thick upper mandible and chestnut band on hind-neck of adults are distinguishing characters.

FIELD-CHARACTERS.—Found alike in the swampy hollows and on the bare parts (where tussocky) of the high open "fjeld" in summer. Flies up into air singing like a Sky-Lark. Call-note, a soft mournful pipe, exactly like that of Golden Plover, but less loud. Black head, chestnut nape and yellow bill of male are easy means of identification. Female and juvenile look like large, stout female Reed-Bunting, but are darker on the back and have practically no white in the tail; in adult females the chestnut nape is also easily seen with glasses, but much less so in juveniles. Generally found in this country in company with Sky-Larks, or in mixed flocks of finches and buntings on stubbles (N.F.T.).

BREEDING-HABITS.—Nests on ground in tussock or under dwarf bush. *Nest*.—Built of grasses and moss, lined finer bents, hair and always some feathers. *Eggs*.—6, sometimes 5 or 7; ground varying from greenish-grey to olive-brown, blotched and clouded reddish-brown, streaked and spotted blackish. Average of 100 eggs, 20.67×14.96 mm. *Breeding-season*.—Begins early June; two weeks later in high north. *Incubation*.—Chiefly by hen, but male also takes part. Period not exactly known. One brood.

FOOD.—Chiefly seeds of grasses and other plants; in summer also insects and larvæ.

DISTRIBUTION.—*Great Britain*.—Autumn passage-migrant, fairly regular northern and western isles and east coast (probably much overlooked) but varying greatly in numbers. Arriving mid-Sept. to end Oct. (extremes Aug. 25 to Nov. 23); occasionally recorded December. Very rarely observed in spring and exceptionally in summer. Has occurred many English counties as vagrant. *Ireland*.—Four: Fastnet Rock (Cork), Oct. 16, 1887; Kilbarrack (Dublin), Jan. 27, 1906, and Dec. 12, 1907; Killough (Down), Jan., 1916.

DISTRIBUTION.—*Abroad*.—Arctic and subarctic latitudes of the Old and New Worlds; in Europe common in Lapland, but south of Arctic Circle only breeds at considerable elevations, such as

Dovrefjeld in Norway; in winter to middle Europe, rarely to Italy; in Asia to China. Allied forms in Kamtschatka and Alaska.

Genus PLECTROPHENAX Stejn.*

PLECTROPHENAX Stejneger, Proc. U.S. Nat. Mus. v, p. 33 (1882—Type *E. nivalis* L.)

Comprises only Snow-Bunting with some closely-allied forms on Aleutians and Islands of Bering Sea. Bill: typical Bunting-bill, though without hump in roof of mouth. Plumage full and soft, wings much more elongated than in *Emberiza*, primaries exceeding secondaries by twice length of tarsus. First visible primary longest, next equal or nearly so, next several millimetres shorter and thence rapidly decreasing in length. Tail about 3-5ths of length of wing, strongly emarginate. Hind claw curved. Coloration of old male somewhat like *Montifringilla*, but no close relationship.

PLECTROPHENAX NIVALIS

57. *Plectrophenax nivalis* (L.)—THE SNOW-BUNTING.

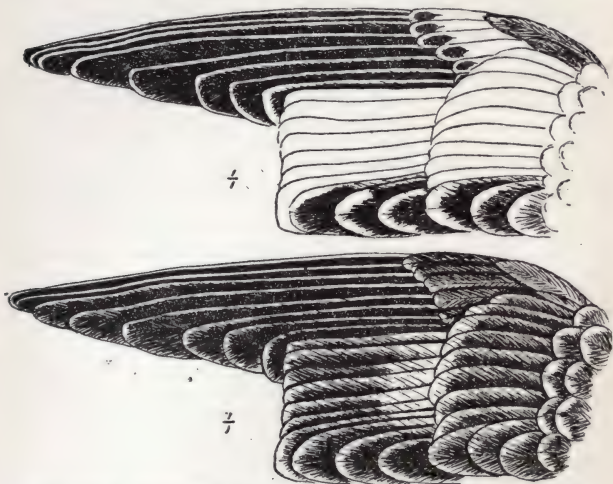
EMBERIZA NIVALIS Linnæus, Syst. Nat., ed. x, i, p. 176 (1758—Lapland, etc.).

Plectrophanes nivalis (Linnæus), Yarrell, II, p. 1; *Plectrophenax nivalis* (Linnæus), Saunders, p. 225.

DESCRIPTION.—*Adult male. Winter.*—Fore-head, crown, and nape white, almost entirely concealed by long tawny-buff (dark brown in centre of crown) tips to feathers; mantle, scapulars, and back black, almost concealed by long fringes varying from tawny-buff to whitish-buff; rump sometimes as back but more often concealed portion of feathers white with black centres or entirely white; upper tail-coverts same, but longest always black with long tawny tips; lores and line over eye buffish-white; ear-coverts, tips of feathers of upper breast (forming narrow pectoral band) tawny and frequently tips of feathers of flanks; rest of underparts pure white; tail: two central pairs black fringed white or buff, next pair black and white, two outer pairs white tipped black on outer webs, next pair with larger black tips; primaries black narrowly edged and tipped white or buffish-white with bases white usually showing just beyond primary-coverts on outer primaries and more extensive on inner feathers, 9th usually having only distal quarter black, and 10th only a black patch on outer web at tip; secondaries white often with black marks on outer webs at tip, three innermost black with long tawny-buff

* Stejneger, Proc. U.S. Nat. Mus., v, 1882, p. 33, has clearly shown that the name *Plectrophanes* is not tenable, and has proposed *Plectrophenax*. The name *Passerina*, which has been used for some time, is not correct.—E. H.

tips and fringes; primary-coverts white usually with black tips (extent of white on primaries and amount or total absence of black on secondaries and primary-coverts varies individually); bastard-wing black; greater coverts white, innermost black fringed and tipped white or tawny-buff; median and lesser coverts white. This plumage is acquired by complete moult in August and early September. *Summer*.—A moult affecting chin, throat, ear-coverts, and sides of head takes place in March and new feathers are pure white except those of ear-coverts which are tinged buff. Abrasion of tips and fringes of feathers gradually causes remarkable change in coloration of upper-parts, whole crown and back of neck



Snow-Bunting (*Plectrophenax nivalis*). Lower, ♀ first winter. Upper, ♂ ad. winter.

becoming pure white; mantle, back, scapulars, and inner secondaries black; rump generally white but in some black and white or nearly black; tail- and wing-feathers black and white; whole under-parts pure white.

Adult female. Winter.—Like male but upper-parts duller buff not so bright tawny; feathers of crown, nape and rump with black centres; black portion of feathers of mantle less extensive and not so deep a black; tail- and wing-feathers browner not so jet-black; two outer pairs of tail-feathers with black extending further towards base of shaft and inner webs black at base, next pair with very little white; primaries with no white showing

above primary-coverts and with distal quarter of inner feathers black; secondaries with largish black marks on distal portion of outer webs; primary-coverts black narrowly fringed white; greater coverts brown-black fringed buff and tipped white; median and lesser coverts brown-black tipped white. *Summer*.—Same moult as in male but new feathers of ear-coverts more tawny than in male. Abrasion of tips of feathers makes upper-parts greyish-black but with buff or whitish remains of tips especially on crown; nape rather whiter speckled and streaked black.

Nestling.—Down, dark grey, fairly long; distribution, inner supra-orbital, occipital, humeral, spinal, ulnar, femoral, and crural. Mouth, externally gape yellow; beak yellow (C. B. Ticehurst, *Brit. B.*, II, p. 193).

Juvenile (Plate 6).—Crown, nape, back of neck, ear-coverts, sides of head, and rump dusky or buffish-grey very faintly streaked black; mantle more buff and considerably more broadly streaked black; chin and centre of throat dusky grey; upper breast and flanks more buff; centre of breast and belly whitish-buff; wing-feathers and primary- and greater coverts as first winter; median coverts greyish-black tipped white; lesser coverts greyish-black fringed greyish-white. *Female* has more black on secondaries and outer tail-feathers than male.

First winter. Male.—Much like adult male but often (not always) of darker tawny colour on upper-parts; feathers of nape and back with small black spots; those of rump always with black centres; primary-coverts either entirely black or with bases white freckled dusky; primaries with less white at bases, 9th and 10th primaries with distal half black; secondaries with outer webs marked brownish-black; greater coverts brownish-black tipped white, but sometimes the central feathers dusky-white only flecked black; median coverts white; lesser coverts black with buffish-white tips or white flecked black (amount of black in wing-feathers and wing-coverts varies individually). The juvenile body-plumage, lesser and median wing-coverts are moulted in Aug.-Sept., but not tail- and wing-feathers and rest of wing-coverts. *Summer*.—Same moult as adult and abrasion has same effect but back of neck always has flecks of black; rump usually black (very occasionally white with few black marks).

First winter. Female.—Much like adult female and difficult to differentiate with certainty, but has more black on secondaries, most of outer webs and distal portion of inner webs being black; nape darker with less white; greater coverts with shorter white tips; pectoral band often with black flecks.

Measurements and structure.—♂ wing 105-112 mm., tail 65-70, tarsus 21-23, bill from skull 11-12 (12 measured). ♀ wing 100-107. Primaries: 1st minute and hidden, 2nd and 3rd equal and longest, 4th 2-5 mm. shorter, 5th 12-15 shorter; 3rd and 4th emarginated outer webs. Secondaries between 8th and 10th primaries. Tail

slightly forked. Bill as in *E. citrinella* but with only a slightly elevated ridge (not a knob) on palate. Short bristle-like feathers covering nostrils. Hind claw about as long as hind toe, curved, thick at base.

Soft parts.—Bill black (summer) brownish-yellow with dusky tip (winter); legs and feet black; iris brown.

CHARACTERS AND ALLIED FORMS.—*P. n. townsendi* (Siberian coast Bering Sea, Aleutian, Pribilof, and Shumagin Islands) is said to be larger with longer bill. *P. hyperboreus* (north central part of Bering Sea) has much more white on upper-parts and wings. White under-parts and white in wings combined with long hind claw, wing-formula and Bunting-bill distinguish it from all other British species.

FIELD-CHARACTERS.—In winter—when oftenest seen in this country—it affects rough places near sea and the shore itself, and to a lesser degree hilly country. Comparatively inconspicuous on ground, is very noticeable in flight by reason of large amount of white in wing, white outer tail-feathers and under-parts. In summer contrast of black and white very striking. Usual gait, like Lapland Bunting's, is a quick run. Alarm note "tweek"; call-note a long-drawn "dwee," not unlike Greenfinch's and Brambling's; song uttered in breeding-season very sweet.

BREEDING-HABITS.—Breeds among screes on mountain-sides among loose boulders or larva blocks, placing nest well out of sight among stones. *Nest*.—Chiefly dead grasses, stalks, little moss, lined finer grasses, hair, wool, and many feathers of alpine and northern birds. *Eggs*.—5 or 6 to 8; ground-colour ranging from yellowish-white to bluish or greenish, boldly marked with blotches and spots red-brown, a few blackish-brown markings and violet shell-marks. Average of 100 eggs 22×16.1 mm. *Breeding-season*.—End May and beginning June in Scotland; in Iceland mid-May to mid-July, but chiefly June; in Lapland latter half June. *Incubation*.—Lasts 14 days, chiefly by hen, but Faber says both sexes share. One brood.

FOOD.—In summer largely insects, especially mosquitoes, also seeds of dwarf birch, grasses, etc.; in winter grain, seeds, sand-hoppers, chrysalids, larvæ of lepidoptera, etc.

DISTRIBUTION.—*England, Wales and Ireland*.—Winter - visitor chiefly to coast, but occasionally inland, and rather commonly on hills in Wales. Occasionally stops until May, and fairly frequently in summer on north and west coasts Ireland. *Scotland*.—Resident. Breeds in small numbers on higher mountains in northern half of mainland—in any case as far south as Perthshire and in Shetlands. Once on St. Kilda. Also winter-visitor, not only to islands and coasts (not much in evidence on north-east coast), but also inland and on hills.

MIGRATIONS.—*British Isles*.—Arrives regularly but in varying numbers east coast mid-Sept. to mid-Nov. (extremes Sept. 1 to Nov. 21). Many remain as winter visitors and passage movements take place down east coast (especially noticeable in years when species is more numerous) up to mid-Dec. and later under adverse weather conditions. Return migration mid-March to mid-April (extremes March 12 to June 8). Less regular west coast, but occasionally in large numbers (as in 1911) in western isles.

DISTRIBUTION.—*Abroad*.—Arctic and subarctic regions of Northern Hemisphere to about 60° in Scandinavia, in winter farther south, in small numbers to Mediterranean countries, even to north Africa, Canary Islands, Madeira and Azores. American ornithologists separate a subspecies from Siberian coast of Bering Sea and Commander, Pribilof, and Shumagin Islands, but this requires confirmation.

[NOTE.—A specimen of the AMERICAN SNOWBIRD, *Junco hyemalis* (L.), of which ten different local races inhabit the whole of North America, was captured at Loop Head Light (Clare), May 30, 1905 (*Irish Nat.*, 1906, p. 137; *Brit. B.*, I, p. 12), having probably escaped from captivity.]

[NOTE.—Specimens of the AMERICAN WHITE-THROATED SPARROW, *Zonotrichia albicollis* (Gm.), have occurred at Aberdeen, near Brighton (Sussex), in Holderness (Yorks.), and on Flannan Isles, but these had probably escaped. Breeds in eastern North America, and winters in eastern United States, and as far south as north-east Mexico and Florida.]

FAMILY ALAUDIDÆ.

This is one of the best-defined families of *Passeres*, though its members are very variable in structure. Sides of tarsus covered with scutes, not with an unbroken lamina. Hind claw quite or almost straight, very sharp and often much elongated. First primary varying from practical absence, unless searched for, to length of primary-coverts (and in foreign species to one-third and even half of length of wing). Sexes generally alike in colour, though different in size, but in *Melanocorypha yeltoniensis* very different in colour. Young in most species spotted, but not in *Ammomanes* (Desert-Larks) and *Rhamphocorys*. Numerous genera in Europe, Africa and Asia, in America only *Eremophila*, in Australia only *Mirafra*.

Key to genera of family ALAUDIDÆ.

- | | |
|-----|---|
| 1 { | First (rudimentary) primary well developed, more than half length of primary-coverts 2 |
| | First (rudimentary) primary invisible or quite narrow and stiff, less than half primary-coverts 3 |

- 2 { Pointed crest in middle of crown *Galerida*, p. 156
 { No pointed crest in middle of crown *Lullula*, p. 160
- 3 { Wing not over 96 mm., secondaries falling short of primaries not more
 (mostly less) than 10 mm. *Calandrella*, p. 153
 { Wing over 96 mm., secondaries falling short of primaries much more
 than 10 mm. 4
- 4 { Tuft of elongated, pointed feathers above each eye in adult of both
 sexes *Eremophila*, p. 167
 { No tuft of elongated, pointed feathers 5
- 5 { Bill slender, pointed, culmen nearly straight *Alauda*, p. 163
 { Bill thick, culmen arched *Melanocorypha*, p. 146

Genus MELANOCORYPHA Boie.

MELANOCORYPHA Boie, Isis, 1828, p. 322 (Mixture, type by designation of Gray, 1840, "*M. latarica*" = *yeltoniensis*).

Somewhat different forms are comprised in this genus, but there is no advantage in further dividing it. Bill comparatively high, strong, somewhat resembling those of many *Fringillidæ*, but not so wide, more laterally compressed. Upper mandible curved, lower nearly straight. Nostrils close to fore-head, covered by bristle-like feathers. Wings long and rather pointed, 2nd to 4th or 2nd and 3rd primaries about equal and longest, 1st invisible in *M. sibirica* and *M. yeltoniensis*, distinctly visible from below though stiff and barely 10 mm. long in *M. calandra*. Tarsus longer than middle toe with claw, claw of hind toe longer than hind toe, and straight. Tail short to medium, not emarginate. Sexes different in colour, at least of certain parts. Six species in Mediterranean countries and from Marocco and south Russia to central Asia and north India.

Key to species of genus MELANOCORYPHA.

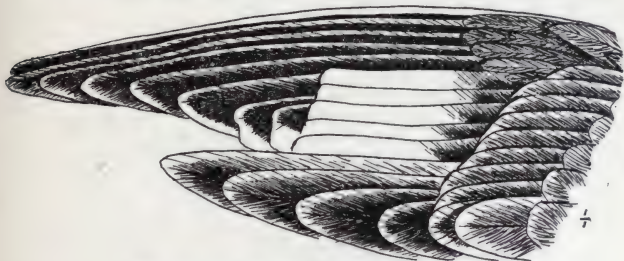
- 1 { Lesser upper wing-coverts reddish *M. sibirica*, p. 147
 { Lesser upper wing-coverts brown 2
- 2 { Inner web of outer tail-feathers white or cream-colour: *M. calandra*, p. 151
 { Inner web of outer tail-feathers dark brown or black: *M. yeltoniensis*, p. 149

MELANOCORYPHA SIBIRICA

58. *Melanocorypha sibirica* (Gm.)—THE WHITE-WINGED LARK.

ALAUDA SIBIRICA Gmelin, Syst. Nat., I, 2, p. 799 (1789—ex Pallas, Reise. Typical locality : River Irtish).

Melanocorypha sibirica (J. F. Gmelin), Yarrell, I, p. 642 ; *Alauda sibirica* J. F. Gmelin, Saunders, p. 257.



White-winged Lark (*Melanocorypha sibirica*) ♂ adult.

DESCRIPTION.—*Adult male.* *Winter.*—Fore-head and crown chestnut, somewhat obscured, especially on hind-part of crown, by tips to feathers which are greyish-buff with brown central streaks ; hind-neck, mantle, scapulars, back and rump dark brown, each feather edged pale brownish-grey with slight pinkish-buff fringes to some of the feathers ; upper tail-coverts as rump but basal part of feathers and fringes chestnut ; lores, orbital ring and short superciliary stripe white ; ear-coverts streaked brown, white and chestnut ; chin white ; cheeks, throat and upper-breast same, spotted dusky ; sides of breast pale chestnut and white, streaked brown ; flanks streaked blackish-brown tinged chestnut ; tibial feathers pale chestnut ; centre of breast, belly, under tail-coverts and axillaries white ; tail brown-black, central pair edged rusty-buff, outer pair white, penultimate pair with whole outer web and narrow fringe on inner white, rest narrowly fringed white ; primaries brown-black narrowly fringed whitish on inner webs, outer web of 2nd white, of 3rd to 7th reddish-buff and tips buff, tips and distal part of inner webs of 8th to 10th white ; secondaries with distal half of both webs white, three innermost black-brown fringed and tipped rufous-buff ; primary-coverts chestnut with concealed portion of inner webs black-brown ; greater coverts black-brown fringed and tipped chestnut and whitish-buff ; median coverts with distal portion chestnut fringed pale buff ; lesser coverts chestnut narrowly fringed pale buff. This plumage is acquired by complete moult in autumn. *Summer.*—No moult. Abrasion makes crown

and lesser wing-coverts more uniform chestnut, mantle rather darker, spots on throat and breast become smaller or wear off, chestnut on sides of breast becomes more prominent.

Adult female. Winter and summer.—Like male but forehead and crown like the mantle and only tinged chestnut; chestnut of wing-coverts paler; spots on throat and breast larger and more in form of short streaks; sides of breast more heavily streaked black-brown and less chestnut; outer pair of tail-feathers with a dark streak at tip.

Nestling.—(Not examined.)

Juvenile.—Crown dark brown, feathers with buffish-white tips and buffish-yellow bases; nape more yellowish-buff, feathers with buffish-white tips and penultimate dark brown marks; mantle, back and rump dark brown, feathers tipped buffish-white fringed and mottled yellowish-buff; upper tail-coverts like nape; lores buffish-white; cheeks same, feathers with penultimate dark brown tips; ear-coverts same but more yellowish-buff; chin white; throat same with a few dusky spots; breast and flanks yellowish-buff, feathers with penultimate dark brown spots; rest of under-parts including axillaries white; tail-feathers brown, mottled yellowish-brown and evenly margined buff with an inner dark brown line, outer pair white tinged buff on outer web and with a brown line on inner web; primaries as tail but 8th to 10th with inner webs buffish-white; innermost secondaries as tail, rest with distal half buffish-white; greater and median coverts as tail but tips whitish; lesser coverts brown tipped whitish-buff; primary-coverts and bastard-wing brown fringed deep creamy-buff.

First winter. Male and female.—Apparently like adults and not to be distinguished. The juvenile plumage is completely (including wings and tail) moulted in autumn.

Measurements and structure.—♂ wing 115-125 mm., tail 64-70, tarsus 24-26, bill from skull 12-14 (12 measured). ♀ wing 106-112. Primaries: 1st minute and less than half primary-coverts, 2nd and 3rd equal and longest, 4th 5-7 mm. shorter, 5th 14-18 shorter, 6th 22-28 shorter; 3rd and 4th emarginated outer webs. In juvenile plumage 1st primary is considerably longer and broader than in adult. Secondaries between 8th and 10th primaries, square tipped and notched, longest between 6th and 7th. Tail almost square. Hind claw straight, spike-shaped and longer than hind toe. Bill strong, upper mandible curved and slightly longer than lower. A good many small and fine rictal and nasal bristles and small bristle-like feathers covering nostrils.

Soft parts.—Bill brownish horn, paler at base; legs and feet yellowish-brown; iris dark brown.

CHARACTERS.—No subspecies. Distinguished easily by its chestnut primary-coverts and lesser wing-coverts and white secondaries.

BREEDING-HABITS.—Nests on ground in depression on grassy steppes. *Nest.*—Like that of other Larks, built of dead grasses, etc., under shelter of clump of grass or plant. *Eggs.*—Usually 4, sometimes 3 or 5; ground creamy or greyish-white, thickly and uniformly spotted with olive-brown and ashy, but sometimes with a zone. Shell noticeably glossy. Average of 100 eggs, 22.6×16.38 mm. *Breeding-season.*—From end April to end May. *Incubation.*—Period not exactly known.

FOOD.—Mainly seeds, but data lacking.

DISTRIBUTION.—*England.*—Eleven. Female, near Brighton (Sussex) Nov. 22, 1869 (Saunders, p. 257). Woodchurch (Kent) male Jan. 27, female Jan. 28, and male Mar. 22, 1902 (N. F. Ticehurst, *Bull. B.O.C.*, XII, p. 50; XIII, p. 15). Pevensey Sluice (Sussex) male Dec. 30, 1907, and female Jan. 1, 1908 (R. Butterfield, *op. c.*, XXI, p. 51; cf. *Brit. B.*, I, pp. 256, 357). One seen near Rye (Sussex) Nov. 3, 1915 (M. L. Kleinwort, *op. c.*, IX, p. 209). Winchelsea (Sussex) male Mar. 30, male and female 31st and male Apr. 2, 1916 (J. B. Nichols, *op. c.*, XII, p. 159).

DISTRIBUTION.—*Abroad.*—South Russian Steppes, Transcaspia, west (Russian) Turkestan to Siberia. On autumn-migration frequently in south-east Europe and also far west: Belgium, Italy, Heligoland, etc.

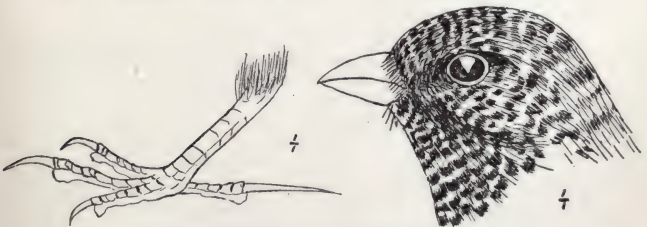
MELANOCORYPHA YELTONIENSIS

59. *Melanocorypha yeltoniensis* (Forst.)—THE BLACK LARK.

ALAUDA YELTONIENSIS Forster, *Philos. Trans.* LVII, p. 350 (1768—S. Russia, Lower Volga, near Lake Yelton).

Alauda tatarica Pall., Seebohm, *Hist. Brit. B.*, II, p. 282.

Melanocorypha yeltoniensis (Forst.), C. B. Ticehurst, *Bull. B.O.C.*, XIX, p. 57; Saunders, *Brit. B.*, I, p. 14.



Black Lark (*Melanocorypha yeltoniensis*) ♂ spring.

DESCRIPTION.—*Adult male. Winter.*—Whole plumage black almost obscured on upper-parts and flanks by long buffish-white or buff fringes to feathers; similar but much narrower fringes on throat and breast, rest of under-parts with scarcely any pale fringes;

tail-feathers tipped buffish-white and central pair fringed same; primaries narrowly tipped same; inner secondaries tipped and fringed same with two or three tooth-like marks on distal portions of outer webs. This plumage is acquired by complete moult in autumn. *Summer*.—No moult. Abrasion of pale-coloured tips gradually makes plumage almost entirely jet-black.

Adult female. Winter.—Upper-parts pale buff, each feather with dark brown centre; upper tail-coverts with uneven or hollow dark brown centres; lores pale buff, freckled brown; ear-coverts and sides of throat much as upper-parts but tinged yellowish; whitish patch at base of sides of neck with blackish-brown patch below it; chin and throat buffish-white, feathers with dark brown bases; upper-breast and flanks dark brown almost concealed by long white or whitish-buff fringes and tips; rest of breast and belly and under tail-coverts white, feathers with brown-black bases; axillaries and under wing-coverts sooty-brown; tail dark brown edged and tipped buffish-white, outer pair with most of outer web white; primaries dark brown tipped whitish, three outer feathers broadly edged white on outer webs; secondaries same but with broader white tips, two innermost paler brown and with a penultimate band of buff; all wing-coverts dark brown fringed and tipped buffish-white. *Summer*.—Abrasion of pale fringes causes more dark brown to show on upper-parts, and black bases of feathers of under-parts are revealed to varying extent by wear of white distal halves.

Nestling.—(Not examined.)

Juvenile.—Much like that of *M. sibirica*, but upper-parts more blackish, not so yellowish-brown, and tips of feathers rather whiter; sides of head tinged yellowish, breast and flanks not so buff and latter dark brown with creamy-white tips; feathers of belly with pale brown bases; tail and wing-feathers as adult female, but paler brown and evenly margined buffish-white; wing-coverts as adult female but paler brown.

First winter. Male and female.—Apparently indistinguishable from adults. The juvenile plumage appears to be completely (including wings and tail) moulted in autumn.

Measurements and structure.—♂ wing 127-139 mm., tail 70-76, tarsus 25-27, bill from skull 16-19 (12 measured). ♀ wing 114-122. Primaries: 1st minute, less than half primary-coverts, 3rd longest, 2nd and 4th sometimes as long but usually 1-4 mm. shorter, 5th 7-12 shorter, 6th 18-25 shorter; 3rd to 5th emarginated outer webs. Secondaries between 8th and 10th primaries, tips rather deeply notched, longest between 7th and 8th. Tail almost square, very slightly forked. Hind claw much as *S. sibirica* but very slightly curved and quite half as long again as hind toe. Bill very strong, shaped like that of *M. sibirica*, a good many small and fine rictal and nasal bristles and small bristle-like feathers covering nostrils.

Soft parts.—Bill yellow, tip blackish; legs and feet black; iris dark brown.

CHARACTERS.—No subspecies. Black colour of male, and large size, thick bill and absence of white feathers in tail and wing, and blackish-brown axillaries and under-wing of female distinguish it from other Larks.

BREEDING-HABITS.—Nests on ground near salt-marshes. *Nest.*—In hollow on ground, lined with dead grasses. *Eggs.*—4 rarely 5, much like Calandra Lark's, but perhaps less boldly marked; ground greyish-white, marbled and blotched with ochreous brown and ashy, chiefly towards big end. Average of 23 eggs, 25.1×18.12 mm. *Breeding-season.*—First half May. *Incubation.*—Period, etc., not precisely known.

FOOD.—Mainly seeds.

DISTRIBUTION.—*England.*—Small party on borders of Sussex and Kent, January, 1907, following being shot: male, near Pevensey (Sussex) Jan. 29; female, near Lydd (Kent) Jan. 31; male, near Lydd, Feb. 18; male, Rye (Sussex) Feb. 16 (*ut supra*). Female, Westfield (Sussex) Jan. 30, 1915 and another Feb. 1, also a male seen Hollington, St. Leonards, early in Jan. (T. Parkin, *Brit. B.*, ix, p. 68).

DISTRIBUTION.—*Abroad.*—From west Siberia and Turkestan to the Lower Volga. In winter more or less vagrant, and has appeared in the Talysh plains, Heligoland, Galizia, Belgium, and Italy.

MELANOCORYPHA CALANDRA

60. *Melanocorypha calandra calandra* (L.). — THE CALANDRA LARK.

ALAUDA CALANDRA Linnaeus, *Syst. Nat.*, ed. xii, i, p. 288 (1766—"Habitat circa Pyrenaeos.")

Melanocorypha c. calandra, J. B. Nichols, *Brit. B.*, x, p. 254.

DESCRIPTION. — *Adult male and female.*

Winter.—Crown, hind-neck, mantle, scapulars, back and upper tail-coverts brown to greyish brown, each feather mesially streaked black-brown very broadly on mantle, less broadly on crown, and narrowly on hind-neck; feathers of centre of mantle



Calandra Lark (*Melanocorypha c. calandra*).

with rather conspicuous whitish-brown edges, most feathers of upper-parts in very fresh plumage with very narrow

whitish tips which soon wear off; rump brown without dark streaks; lores and line over and behind eye, creamy-white; cheeks whitish, speckled brown; ear-coverts brown; chin, centre of throat and sides of neck below ear-coverts creamy-white sparsely speckled dark brown, except in malar region where speckles form ill-defined stripe; on each side of lower throat conspicuous black patch; upper-breast buffish-white streaked black-brown, rest of breast and belly and under tail-coverts white; flanks, under wing-coverts and axillaries greyish-brown, feathers with very narrow greyish-white tips; tail-feathers brown-black, central pair widely edged pale brown, outermost pair with outer and most of inner web white, penultimate pair narrowly fringed white and tip white, rest with smaller white tips; wing-feathers brown-black, outer webs narrowly fringed pale brown (in 2nd primary whiter), outer primaries with narrow brownish-white tips, inner primaries and secondaries with wider and whiter tips, except innermost secondaries which are fringed and tipped pale brown; primary-coverts brown-black, narrowly fringed and tipped pale brown; all wing-coverts dark brown fringed and tipped (broadly in greater and median), pale brown to whitish-brown. This plumage is acquired by complete moult in autumn. *Summer*.—No moult. Abrasion causes very little change, but mantle becomes rather darker owing to wear of brown edges of feathers, streaks on breast and black patches on sides of throat become still more prominent.

Nestling.—(Not examined.)

Juvenile.—(Not examined.)

First winter.—Apparently like the adults and probably the juvenile plumage is completely moulted in the first autumn as in other Larks, but no specimen moulting has been examined.

Measurements and structure.—♂ wing 120-135 mm., tail 57-65, tarsus 26-30, bill from skull 16-20 (12 measured). ♀ wing 110-132. Primaries: 1st minute and less than half primary-coverts, 2nd and 3rd usually equal and longest but 2nd sometimes 1-4 mm. shorter, 4th 1-5 shorter, 5th 8-16 shorter, 6th 13-27 shorter; 3rd to 5th emarginated outer webs. Secondaries between 7th and 10th primaries, square tipped and notched. Tail almost square. Hind-claw straight, spike-shaped and longer than hind-toe. Bill very strong and thick, upper mandible curved and slightly longer than lower. Some small and fine rictal and nasal bristles, and small bristle-like feathers covering nostrils.

Soft parts.—Bill, upper mandible dark horn, lower yellowish horn; legs and feet yellowish-brown; iris brown.

CHARACTERS AND ALLIED FORMS.—*M. c. psammochroa* (western Persia, Transcaspia to Turkestan), is paler and rather more sandy on upper-parts and paler on flanks. *M. bimaculata* (Turkestan, Persia, Lebanon, Asia Minor) has not white tips to secondaries and inner primaries. Large size, black patches on sides of lower

throat and white on inner web of outer pair of tail-feathers distinguish it from other British Larks.

FIELD-CHARACTERS.—Distinguished from all other British Larks (except Black and perhaps White-winged) by its size, being almost as big as a Song-Thrush. Conspicuous white tips to secondaries form a ready distinction, when seen in flight, from female of Black Lark, while black patch on side of neck and absence of white on base of secondaries distinguish it from White-winged Lark (F.C.R.J.).

BREEDING-HABITS.—Nests in depression in open country, especially rough pastures or cornfields, and frequently sheltered by a thistle or other conspicuous plant. *Nest.*—Dead grasses and bents, lined with finer materials. *Eggs.*—Usually 4 or 5, but clutches of 6 and 7 have been recorded; ground dirty white, rather boldly spotted and blotched with ochreous-brown and grey shell-marks. The greenish shade often found in fresh eggs soon fades. Average size of 100 eggs, 24.2×17.8 mm. *Breeding-season.*—From early April in Spain and late April in Greece to June—so apparently double-brooded.

FOOD.—Naumann states that it feeds on grain and wild seeds and Irby notes that it is destructive to young shoots of field-peas. Also eats insects and their larvæ (orthoptera, small coleoptera, etc.).

DISTRIBUTION.—*England.*—Two obtained (from party of five) at Filsham Farm, St. Leonards-on-Sea (Sussex), May 16th and 17th, 1916 (*ut supra*). Two said to have been obtained in Devon (Zool., 1863, p. 8768, 1869, p. 1599, 1876, p. 4835), not considered authentic.

DISTRIBUTION.—*Abroad.*—South Europe: Spain and south France, Mediterranean Islands to Balkan Peninsula and south Russia (as far as the Caspian Sea), Asia Minor and Armenia, Palestine, also Morocco, Algeria and Tunisia. Occasional stragglers in Heligoland and in Germany; as this Lark is often kept in cages, single occurrences require careful consideration. Replaced by another race in western Persia, Transcaspia, to Turkestan.

Genus CALANDRELLA Kaup.

Calandrella Kaup, Skizz. Entw. und Natürl. System, p. 39 (1829—Genotype—only sp. mentioned—*C. brachydactyla*).

Might almost be described as a miniature *Melanocorypha*. Bill short, nearly conical, 1st primary not visible, hidden under primary-coverts, 2nd to 4th as a rule about equal and longest. Secondaries very long, in *C. brachydactyla* quite or nearly as long as primaries. Hind claw about as long as hind toe, a little curved. Sexes alike. Europe, Asia and Africa.

CALANDRELLA BRACHYDACTYLA

61. *Calandrella brachydactyla brachydactyla* (Leisler)—THE SHORT-TOED LARK.

ALAUDE BRACHYDACTYLA Leisler, Ann. Wetterau. Ges., III, p. 357, pl. 19 (1814—Montpellier in France).

Calandrella brachydactyla (Leisler), Yarrell, I, p. 637; *Alauda brachydactyla* Leisler, Saunders, p. 255.

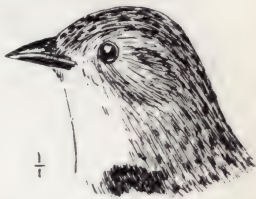
DESCRIPTION.—*Adult male and female.* *Winter.*—Whole upper-parts

varying from pale greyish-brown to sandy-buff, broadly streaked black-brown; nape more uniform with very fine streaks; rump and upper tail-coverts with scarcely any streaks (crown in sandy-coloured specimens usually reddish with fine dark streaks); lores and superciliary stripe whitish-buff; ear-coverts grey to sandy-brown; cheeks minutely spotted dark brown; chin, throat,

breast, belly and under tail-coverts white with a sandy-buff band across upper-breast; flanks washed sandy-buff; on each side of upper-breast a dark brown patch; axillaries and under wing-coverts white tinged sandy-buff; tail-feathers, central pair dark brown broadly fringed sandy-buff, rest blacker brown, outer pair with buffish-white outer web and large wedge-shaped mark on inner web, penultimate pair with most of outer web buffish-white, rest narrowly edged and tipped same; primaries brown tipped and edged on outer webs buff and on proximal half of inner webs whitish; secondaries same, but inner feathers broadly edged and tipped sandy or whitish-buff; primary-coverts like primaries; greater and median coverts like inner secondaries but with reddish-buff marks above the pale tips; lesser coverts more uniform buff. This plumage is acquired by complete moult in early autumn. *Summer.*—No moult and abrasion causes little change, but crown becomes rather more uniform, dark streaks on upper-parts and dark patches on sides of upper-breast more pronounced.

Nesting.—(Not examined.)

Juvenile.—Upper-parts in general coloration varying as adults, each feather evenly tipped white to whitish-buff with a penultimate dark mark, giving upper-parts (including rump and upper tail coverts and median and lesser wing-coverts) a spotted appearance; tail, wing-feathers, primary- and greater coverts with even margins of white to buff; lores, superciliary stripe and ear-coverts as adult but some of latter with minute whitish tips; under-parts white with an irregular band of dark brown spots across upper-breast coalescing and forming dark patches at sides as in adult.



Short-toed Lark
(*Calandrella b. brachydactyla*).

First winter and summer.—Like adults. The juvenile plumage is completely (including wings and tail) moulted in Aug.-Sept.

Measurements and structure.—♂ wing 92-95 mm., tail 57-59, tarsus 20-21, bill from skull 11-12.5 (12 measured). ♀ wing 85-94. Primaries: 1st minute and hidden, 3rd longest, 2nd usually equal sometimes 1-2 mm. shorter, 4th 1-2 shorter, 5th 8-13 shorter, 6th 15-19 shorter; 3rd and 4th emarginated outer webs. Secondaries between 7th and 10th primaries, tips fairly square and notched, but longest between 4th and 5th primaries, and tips pointed. In juvenile plumage 1st primary is much larger than in adult being almost equal to longest primary-covert instead of about half, it is also broader and less pointed; longest secondary only reaches between 5th and 6th primaries. Tail almost square, very slightly forked. Hind claw almost straight, spike-shaped and longer (often half as long again) than hind toe. Bill strong and thickish tapering gradually to rather blunt point. Fine rictal and nasal bristles and small bristle-like feathers covering nostrils.

Soft parts.—Bill, upper mandible horn, cutting edges and lower mandible whitish-horn; legs and feet pale brownish-flesh; iris brown.

CHARACTERS AND ALLIED FORMS.—Subspecies require careful comparison. For differences of *C. b. longipennis* see under that form. *C. b. dukhunensis* (India, Mongolia) has darker breast and flanks and darker brown upper-parts, *C. b. rubiginosa* (southern Algeria, Tunis, Morocco) is paler reddish-sandy colour, *C. b. artemisiana* (Caucasus) is said to be more greyish. All forms of *C. minor* are distinguished from those of *C. brachydactyla* by upper-breast being clearly streaked dark brown and long inner secondaries shorter, usually not reaching further than 7th primary. Distinguished from other British Larks by small size and unstreaked under-parts.

FIELD-CHARACTERS.—Distinguished by small size from all the other Larks on the British List. At close quarters, light coloration of under-parts, and dark patches on each side of upper-breast are characteristic. Haunts barren plains. Song full and loud but rather broken, uttered chiefly on wing but also on ground (F.C.R.J.).

BREEDING-HABITS.—Nests in depression of ground, sheltered by thistles, grass, etc. on open plains. *Nest.*—Built of dead grasses, roots, with hair, bits of wool or down in lining. *Eggs.*—3-5, variable, but generally some shade brownish-yellow in ground; occasionally bluish; finely freckled pale brownish- and ashy-grey spots. Some are marbled, others uniform with a dark hair streak, and some have darker zone. Average of 104 eggs, 19.6×14.6 mm. *Breeding-season.*—From mid-April onward to June and July. *Incubation.*—Lasts thirteen days; probably chiefly by hen. Two broods.

FOOD.—Chiefly small seeds, also insects.

DISTRIBUTION.—*British Isles.*—Twelve England, four Scotland, one Ireland. One near Shrewsbury (Salop), four near Brighton, and one Amberley (Sussex); one near Southampton and one near Portsmouth (Hants.); one Orpington (Kent); one Scilly Isles; one near Cambridge; one South Breydon (Norfolk). Flannan Isles (O. Hebrides) one Sept. 20, 1904; Fair Isle one June 18, 1908, one Nov. 28, 1910; Auskerry (Orkney) one Oct. 1, 1913. One Blackrock Light (Mayo) Oct. 11, 1890. All occurrences in autumn except one April, two June, one July.

DISTRIBUTION.—*Abroad.*—From south France throughout south Europe and Mediterranean Islands and north-west Africa, north of Atlas, eastward to Asia Minor and Palestine. Northern birds more or less migratory, in winter to Sahara and Sudan (seems to cross the western Sahara, but not observed south), also to north-west India; more southern birds resident or vagrant. Has occurred casually elsewhere, as in Heligoland, Switzerland, near Metz. It is desirable that such specimens should be carefully examined, as they might belong to the eastern form. A paler race inhabits southern Algeria and southern Tunisia.

62. *Calandrella brachydactyla longipennis* (Eversmann).— THE EASTERN SHORT-TOED LARK.

ALAUDA LONGIPENNIS Eversmann, Bull. Soc. Imp. Nat. Moscou, XXI, p. 219 (1848—Songaria).

Calandrella brachydactyla longipennis W. E. Clarke, Scot. Nat., 1915, p. 100.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Like *C. b. brachydactyla*, but upper-parts paler and greyer (more mealy), crown like mantle not rufous as it so often is in typical form, eye-stripe rather whiter. Requires careful comparison, but differences conspicuous in a series.

Measurements.—♂ wing 90–95 mm. (one 98), tail 52–59, tarsus 19–21, bill from skull 12.5–13 (12 measured). ♀ wing 85–90.

DISTRIBUTION.—*Scotland.*—One Fair Isle (Shetlands) Nov. 11, 1907 (*ut supra*).

DISTRIBUTION.—*Abroad.*—Not sufficiently known, but at least breeding in west Turkestan, Transcaspia, east Persia, north to Kuldja (on the Ili river) in Dsungaria to the southern slopes of Tian-Shan, east to Kobdo. Migrating in south-westerly direction, to Asia Minor, Greece, Egypt and Nubia, and even Algeria and western Sahara to the Oued Saret. (India doubtful.)

Genus *GALERIDA* Boie.

Galerida Boie, Isis 1828, p. 321 (Mixture; genotype by designation—Gray 1840 and 1855—*G. cristata*).

Differs from all other Larks in having a pointed crest, arising from about middle of crown. Bill more or less pointed. First

primary distinctly visible, about as long as primary-coverts, next four not very different in length. Hind claw long, almost straight. Sexes alike. Two often confounded species in Europe and north-west Africa, a third in India. From western Europe to Corea, south to Abyssinia and Somaliland, and to south India.

GALERIDA CRISTATA*

63. *Galerida cristata cristata* (L.)—THE CRESTED LARK.

ALAUDA CRISTATA Linnæus, Syst. Nat., ed. x, i, p. 166 (1758—"Habitat in Europæ viis." Vienna fixed as restricted typical locality by Hartert, Vög. pal. Fauna, i, p. 228).

Alauda cristata Linnæus, Yarrell, i, p. 632; Saunders, p. 253.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole upper-

parts greyish- to buffish-brown, streaked on head and mantle black-brown, back and rump being more uniform; upper tail-coverts with dark centres, greyish tips and rufous bases; feathers of centre of crown brownish-black with very narrow greyish-buff edgings, in



Crested Lark (*Galerida c. cristata*).

shape very narrow and elongated, projecting 10-20 mm. beyond other feathers and forming very distinct crest (on average rather shorter in ♀ than in ♂); narrow line from nostrils over and behind eye buffish-white; ear-coverts buffish-brown; lores, under eyes, cheeks and sides of throat buffish-white, streaked black-brown; upper-breast same but buffer and streaks broader; chin and centre of throat unstreaked; centre of lower-breast, belly, and under tail-coverts very pale buff; longer under tail-coverts and sides of belly with a few fine dark streaks; flanks brownish-buff; axillaries and under wing-coverts pinkish-buff; tail, central pair dark brown with paler fringes and tinged rufous at base, rest brown-black tipped greyish-brown, outer pair with outer web and wedge-shaped mark on inner web rufous-buff, penultimate pair with narrow edging of rufous-buff on outer web; wing-feathers dark brown narrowly edged buff on outer webs and broadly edged rufous-buff on inner webs, innermost secondaries

* The name *Galerida* has been rejected, and new names have been created by Madarász and Dresser, because they supposed that *Galerida* was a misprint for *Galerita*, which was preoccupied. There is, however, nothing in the original publication to prove this. In the same volume Brehm adopted *Galerida*, and we may suppose that Boie and Brehm purposely spelt the name with *d* in order to distinguish it from the well-known name *Galerita*, referring to a common beetle, undoubtedly known to both authors.—E.H.

paler brown with greyish fringes; primary-coverts like primaries; greater and median coverts brown with dark centres and whitish-buff fringes and tips; lesser coverts brown, narrowly tipped greyish-white. This plumage is acquired by complete moult from Aug. to Nov. *Summer*.—No moult. Abrasion of greyish or buffish fringes of feathers of mantle and crown causes dark centres of feathers to show more, giving a darker and more streaked appearance, under-parts become whiter less tinged buff.

Nestling.—Down, whitish straw-colour, long and plentiful; distribution, inner supra-orbital, occipital, humeral, ulnar, spinal, femoral and filaments on ventral. Mouth, inside dull orange-yellow, two black spots at base and another at tip of tongue; externally gape-flanges dull ivory-white.

Juvenile.—Upper-parts buffish-brown, feathers of crown, mantle and scapulars with large white tips and penultimate dark mark, giving a spotted appearance; feathers of fore-head, back of neck and rump with narrow whitish edgings; upper tail-coverts with more buffish tips; crest-feathers shorter and more rounded than in adult; dark brown markings on upper-breast in form of spots rather than streaks and much less heavy than in adult; rest of breast, belly, flanks and under tail-coverts whiter than adult and unstreaked; tail much as adult but two middle pairs paler and all tipped buffish-white; wing-feathers paler and more buffish-brown than adult and with more distinct buff edgings and whitish tips with narrow dark penultimate lines more marked in inner secondaries; all wing-coverts like wing-feathers but with broad whitish tips and distinct dark penultimate lines.

First winter and summer.—Like adult. The juvenile plumage is completely (including wings and tail) moulted in early autumn.

Measurements and structure.—♂ wing 105-110 mm., tail 61-68, tarsus 25-28, bill from skull 17-19 (12 measured). ♀ wing 94-102. Primaries: 1st 3-6 mm. shorter than longest primary-covert, 4th longest, 3rd and 5th often as long but usually 1-2 shorter, 2nd 1-5 shorter, 6th 5-8 shorter; 3rd to 6th emarginated outer webs. Secondaries between 8th and 10th primaries, tips square and notched, longest inner secondary nearly equals 6th primary. In juvenile plumage 1st primary is as long as longest primary-covert and tip is much rounder and less pointed than in adult. Tail almost square. Hind claw almost straight, spike-shaped and as long as, or rather longer than, hind toe. Bill rather slender, culmen curved. A few fine rictal and nasal bristles and bristle-like feathers covering nostrils.

Soft parts.—Bill, culmen and tip of lower mandible dark horn, rest of lower and cutting edge of upper pale flesh; legs and feet pale flesh; iris black-brown.

CHARACTERS AND ALLIED FORMS.—Numerous races displace one another geographically, distinguished by small differences in size

and especially by different shades of colour varying from the almost black *G. c. nigricans* (Nile Delta) to the pale grey *G. c. iwanowi* (Turkestan), pale sandy *G. c. deichleri* (north-west Sahara) and rufous-sandy *G. c. isabellina* (Sudan). *G. theklæ* and its subspecies are distinguished by comparatively shorter bill, greyish axillaries and longer first primary. The long narrow feathers of the crest distinguish Crested Lark at once from all other British Larks (see Plate 6).

FIELD-CHARACTERS.—Haunts roadsides, railway tracks, and sandy ground in parties of two or three, allowing very close approach. Call-note sweet and melodious "dudria"; song uttered both on wing and from ground, not unlike Wood-Lark's, but less flute-like and broken into short phrases. Tail short. At close quarters long crest, whether depressed or erect, is characteristic, and outer web of rectrices buff and not white as in Sky-Lark (F.C.R.J.).

BREEDING-HABITS.—Breeds in dry, sandy districts, near roadsides, also in corn and potato fields and gardens, exceptionally on sheds. *Nest.*—Carelessly built of dead grasses and plants, sometimes hair in lining, placed in depression of ground. *Eggs.*—Usually 4 or 5, glossy, and finely spotted or marbled with shades of yellowish-brown and ashy; sometimes fine brown and grey speckles on greyish-white ground. Spots sometimes form cap or zone at big end. Erythristic variety recorded. Average of 100 eggs, 22.7×16.8 mm. *Breeding-season.*—End April (exceptionally early April) to beginning June. *Incubation.*—Lasts 12-13 days. Both sexes take part. Two broods, perhaps sometimes three. *Fledging-period.*—In nest 9-11 days, flying a week later.

FOOD.—Principally seeds of grasses, corn, etc., and insects. Young fed on insects and larvæ.

DISTRIBUTION.—*England.*—Seven. Four in autumn at intervals and one June 12, 1880, Cornwall; one Littlehampton (Sussex) prior to 1845; one near Shoreham (Sussex) Oct. 20, 1863; one Dover (Kent) April 22, 1879. Others, including a supposed example co. Dublin, 1836, not authenticated (*cf.* Saunders, and Ussher, *List of Irish Birds*, p. 22). A male from Penzance (Cornwall) Sept., 1846, in Mr. J. H. Gurney's collection, is of this form, but the other specimens require careful comparison.

DISTRIBUTION.—*Abroad.*—Europe from south Sweden to Pyrenees, Italy, Balkans, and south-west Russia. Represented by between twenty and thirty allied forms in Mediterranean countries, north Africa to Sudan (Senegambia, Nigeria, Somaliland) and many parts of Asia.

Genus *LULLULA* Kaup.*

Lullula Kaup, Skizz. Entw. und Natürl. System, p. 92 (1829—No species named, but description that of *L. arborea*, which is also the type by subsequent designation—Gray, 1855—and by subsequent monotypy).

Closely allied to *Galerida* but without pointed crest, tail shorter, about three-fifths of wing, bill thinner. First primary obvious, about 15 mm. long. Sexes alike. One species in several closely allied forms in Europe, north-west Africa and west Asia (Transcaspia, Persia).

*LULLULA ARBOREA*64. *Lullula arborea arborea* (L.)—THE WOOD-LARK.

ALAUDA ARBOREA Linnæus, Syst. Nat., ed. x, i, p. 166 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Alauda arborea Linnæus, Yarrell, I, p. 625; Saunders, p. 251.



Wood-Lark (*Lullula a. arborea*).

DESCRIPTION.—*Adult male and female. Winter.*—Crown, mantle and scapulars broadly streaked brown-black, feathers edged buffish-to reddish-brown, feathers of hind-part of crown elongated (but not narrow, see Plate 6) forming crest; hind-neck buffish-white narrowly streaked black-brown; back and rump more or less olivaceous-brown; upper tail-coverts more buffish-brown; lores and broad superciliary stripe extending behind ear-coverts buffish-white; sides of neck same but streaked black-brown; ear-coverts reddish-brown with darker tips; chin and throat white tinged yellowish-buff with small black-brown spots lengthening and broadening into somewhat heavy streaks on breast; flanks pale buffish-brown with few fine streaks; belly, vent and under tail-coverts buffish to yellowish-white; axillaries smoke-grey; tail brown-black, central pair brown, outer pair with distal halves pale brown, next (penultimate) pair with whitish tips and next

* It is impossible to suppress the generic name *Lullula*. If *Galerida* is separated generically, then *Lullula* must be too. Otherwise nearly all Larks must be placed in the same genus.—E.H.

two pairs with smaller wedge-shaped white marks at their tips; primaries and secondaries black-brown tipped pale buff, primaries narrowly fringed pale buff and secondaries buffish-brown on outer and inner webs, inner secondaries with large wedge-shaped brown marks at tips; primary-coverts and bastard-wing brown-black broadly tipped buffish-white; under bastard-wing a conspicuous buffish-white patch; greater and median coverts brown fringed buff; lesser coverts same but outer ones tipped buffish-white and inner ones grey-brown. This plumage is acquired by complete moult in early autumn. *Summer*.—No moult. Abrasion of paler fringes of feathers causes crown and mantle to become darker, throat and belly becoming purer white.

Nestling.—(Not examined.)

Juvenile (Plate 6).—Crown, mantle, scapulars, back, primaries, secondaries and wing-coverts black-brown, each feather (including primaries) rounded and evenly margined with pale or whitish-buff; rump and upper tail-coverts buff-brown, each feather with small paler tip and a penultimate narrow darker band; nape, eye-stripe, sides of head and under-parts closely resembling adult but streaks on breast short and drop-shaped; tail black-brown, two outer pairs marked pale buff or buffish-white, central pair brown fringed reddish-brown and tipped pale buff; primary-coverts and bastard-wing as adult. Feathers of back of crown elongated but not so much as in adult.

First winter and summer.—Like adults. The juvenile plumage is completely (including wings and tail) moulted in early autumn.

Measurements and structure.—♂ wing 91-98 mm., tail 48-54, tarsus 20-22.5, bill from skull 12-13 (12 measured). ♀ wing 88-95. Primaries: 1st 3-6 mm. shorter than longest primary-covert (one specimen 1 mm. shorter), 3rd and 4th longest, 5th often as long sometimes 1-2 shorter, 2nd 2-4 shorter, 6th 6-8 shorter; 3rd to 6th emarginated outer webs. Secondaries between 7th and 10th primaries, tips square and notched, longest between 6th and 7th. In juvenile plumage 1st primary is broader and 1-5 mm. longer than longest primary-coverts. Tail square. Hind claw slightly curved and at least half as long again as hind toe. Bill fine and sharp. A few fine rictal and nasal bristles, nostrils with a prominent operculum and almost bare of feathers.

Soft parts.—Bill, upper mandible dark brown, lower paler with pinkish-brown base; legs and feet brownish-flesh; iris umber.

CHARACTERS AND ALLIED FORMS.—Forms from Balkans and Greece (paler) and east Persia (greyer) have been separated as well as others from Sardinia and Corsica and north-west Africa, but require further study. Broad white eye-stripe, white tips to primary-coverts, very short tail are distinctive features in adult. Juvenile closely resembles that of Sky-Lark, but is rather darker and less rufous on upper-parts, whiter nape, darker primary-coverts with

longer whitish tips, longer first primary, much finer bill, outer tail-feathers not entirely white.

FIELD-CHARACTERS.—Short tail, buffish-white eye-stripes meeting at nape, and pinkish-brown, not yellowish-brown, legs at once distinguish Wood-Lark from Sky-Lark at close quarters. Sometimes sings on ground or top of tree or bush but more usually in the air, and often at as great a height as Sky-Lark, but whereas song of that species seldom lasts more than five minutes, Wood-Lark's may be maintained without cessation for an hour as the bird swings to and fro in wide half-circles above its nesting-place. The ascent is made, not perpendicularly like Sky-Lark's, but in a spiral curve, short tail being especially noticeable in soaring bird. Song, sweeter but less varied than Sky-Lark's, is not so monotonous as often stated. Comprises series of short phrases, each being repetition of one note, now tinkling song-note of Pipit, then one resembling "dee-ur" of Wood-Wren, and again, and perhaps most frequently, a flute-like "lu-lu." After young are fledged birds keep together in family parties, and at times combine in larger flocks. Call-note, a melodious "tloo-ee-et," often attracts attention to these little parties as birds run on turf: it is also uttered on wing.

BREEDING-HABITS.—Nests on or close to ground in depression, sheltered by bracken, grass or heath, in open sandy country or on hillsides with plenty of cover. *Nest.*—Neatly constructed of bents with moss in foundation, and finer grass, horsehair, etc., in lining. *Eggs.*—4-5, very rarely 6, with greyish-white ground, closely freckled with fine reddish-brown or olive-brown spots, and violet-grey shell-marks, in some cases with well-defined zone at big end. Average of 100 eggs, 21.1×15.6 mm. *Breeding-season.*—Begins end March and early April and lasts till June. *Incubation.*—Lasts 14-15 days, apparently by hen only. Young leave nest before they can fly. Two broods as a rule.

FOOD.—Chiefly insects, especially coleoptera and their larvæ, small orthoptera, diptera, etc., but also seeds of grasses and other plants. Young fed on diptera and caterpillars.

DISTRIBUTION.—*England and Wales.*—Resident. Locally distributed, most frequent southern counties, especially Devon, local lower Severn and Thames valleys, from Bucks. to west Norfolk and Suffolk, in southern Midlands and south Wales; northwards very scarce, but breeds rarely parts of Yorks., and probably parts of north Wales; breeding has been recorded from Lincs., Lancs. and Cumberland, and vagrants from Northumberland and Durham. Has undoubtedly decreased, and is not now found in places where formerly known. *Scotland.*—Rare but regular autumn-winter visitor to Fair Isle, arriving from end Sept. to beginning Nov. sometimes staying winter and even as late as April 2. Elsewhere

vagrant, Pentland Skerries (Orkney) one Oct., 1911, Auskerry (Orkney) one Oct., 1912, and two Oct., 1913. Flannans (O. Hebrides) one Nov., 1913, to Jan., 1914. Isle of May (Forth) one Oct. 16, 1910, one Sept. 29, 1912. *Ireland*.—Formerly in several counties, now extremely rare and apparently breeding only in Wicklow.

MIGRATIONS.—*British Isles*.—Except for Scottish records no evidence of migration, except those of quite a local character, but in severe weather small flocks and single birds are noticed on coast in various parts.

DISTRIBUTION.—*Abroad*.—Middle Scandinavia to south Europe and Ural. Local forms have been separated from Corsica and Sardinia, north-west Africa, south-east Europe, Persia, and Transcaspiæ, but, though it is certain that southern and eastern birds are paler, their distribution and relations to one another are not yet clearly defined.

Genus ALAUDA L.

Alauda Linnæus, Syst. Nat., ed. x, i, p. 165 (1758)—Type by subsequent designation: *A. arvensis*—Swainson 1827, Gray 1840).

Bill stronger than in *Lullula*, much more slender than in *Calandrella*. First rudimentary primary visible from below, but minute, much less than half primary-coverts. Inner secondaries very much elongated, but still falling short of primaries. Sexes alike. Contains Sky-Larks and allies, ranging over Europe, Africa north of Sahara, Asia to Japan, Kamtschatka, Formosa, China and India.

ALAUDA ARVENSIS

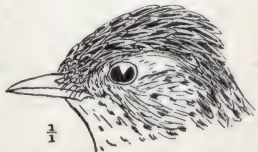
65. *Alauda arvensis arvensis* L.—THE SKY-LARK.

ALAUDA ARVENSIS Linnæus, Syst. Nat., ed. x, i, p. 165 (1758—"Habitat in Europæ apricis." Restricted typical locality: Sweden).

Alauda arvensis scotica Tschusi, Orn. Jahrb. xiv, p. 162 (1903—Scotland).

Alauda arvensis Linnæus, Yarrell, i, p. 614; Saunders, p. 249.

DESCRIPTION.—*Adult male and female. Winter*.—Upper-parts brown (varying from yellowish- or buffish-brown to more greyish-brown, occasional examples are ashy or mealy or reddish-sandy) broadly streaked black-brown; feathers of crown, mantle, rump and upper tail-coverts narrowly tipped whitish-buff; feathers of hind-part of crown elongated (but not narrow) forming slight crest; feathers of nape paler, and with fine dark streaks; lores and narrow



Sky-Lark (*Alauda a. arvensis*).

superciliary stripe extending behind eye whitish-buff; ear-coverts brown, streaked dark brown; chin buffish- or yellowish-white; throat same but with fine, short, dark brown streaks; upper-breast more rufous-buff and strongly streaked black-brown; flanks same but with fewer and less prominent streaks; lower-breast, belly and under tail-coverts yellowish- or buffish-white; axillaries and under wing-coverts smoke-grey tinged buff; tail black-brown narrowly fringed brown, central pair broadly fringed brown, outer pair with outer web and large wedge-shaped mark on inner white, next (penultimate) pair with outer web white; wing-feathers dark brown with tips, inner webs and outer webs of outer primaries fringed buffish-white, outer webs of inner primaries and secondaries fringed more reddish-buff and innermost secondaries paler brown on distal portion; all wing-coverts dark brown fringed and tipped buff. This plumage is acquired by complete moult in Aug.-Sept. *Summer*.—No moult. By abrasion of pale tips (usually lost by December) and fringes of feathers, upper-parts gradually become much darker, less yellowish and more grey, under-parts become whiter less buffish.

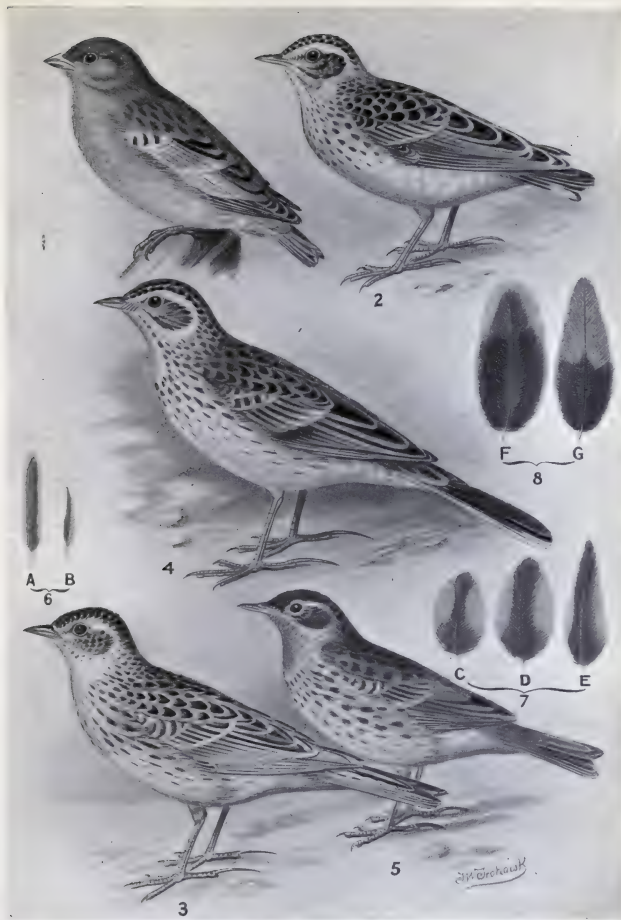
Nestling.—Down, very pale straw-colour, long and plentiful; distribution, inner supra-orbital, occipital, humeral, ulnar, spinal and femoral. Mouth, inside dull yellow, two black spots at base of tongue and another at tip, externally flanges white.

Juvenile (Plate 6).—Whole upper-parts yellowish to dark brown, each feather evenly fringed and tipped white or pale buff with a dark brown subterminal line or mark, feathers of nape and rump with narrower tips; under-parts much as adult but throat with scarcely any spots, and streaks on upper-breast not so dark and more drop-shaped; chin and cheeks often with a yellowish tinge; flanks brownish with a few spots; wing- and tail-feathers brown, evenly fringed buff with a subterminal dark brown line, outer tail-feathers like adult.

First winter and summer.—Like adults. The juvenile plumage is completely (including wings and tail) moulted in Aug.-Sept.

Measurements and structure.—♂ wing 111-122 mm., tail 71-76, tarsus 23-26, bill from skull 12.5-14.5 (12 measured). ♀ wing 99-108. Primaries: 1st minute, less than half longest primary-covert, narrow and pointed, 3rd longest, 2nd and 4th sometimes as long but usually 1-2 mm. shorter, 5th 5-10 shorter, 6th 14-22 shorter; 3rd to 5th emarginated outer webs. Secondaries between 8th and 10th primaries, tips notched, longest about equals 6th primary. In juvenile 1st primary is broader, not so pointed and only 3-6 mm. shorter than longest primary-covert (in one specimen as long as covert). Tail slightly forked. Hind claw sharply pointed, nearly straight, from twice as long to half as long again as hind toe. Bill much stronger than Wood-Lark. A few fine rictal and nasal bristles and short feathers covering nostrils.

Soft parts.—Bill, upper mandible dark brownish-horn, cutting



(BIRDS HALF NATURAL SIZE. FEATHERS NATURAL SIZE.)

- 1, Juvenile Snow-Bunting (*Plectrophenax nivalis*). 2, Juvenile Wood-Lark (*Lullula a. arborea*).
 3, Juvenile Sky-Lark (*Alauda a. arvensis*). 4, First-winter Richard's Pipit (*Anthus r. richardi*).
 5, Juvenile Rock-Pipit (*A. r. petrosus*). 6, 1st primaries of Sky-Lark (a) juvenile, (b) adult.
 7, Crest-feathers of (c) Sky-Lark, (d) Wood-Lark, (e) Crested Lark. 8, Feathers from rump
 of (f) Red-throated Pipit, (g) Meadow-Pipit.

edges and lower mandible pale horn ; legs and feet yellowish-brown ; iris brown.

CHARACTERS AND ALLIED FORMS.—For differences of *A. a. cinerascens* see under that form, *A. a. cantarella* (east and south-east Europe) is intermediate between the two and impossible to determine without comparison of a series, *A. a. harterti* (north-west Africa) has a longer, more pointed bill ; several eastern forms differ in size and shade of coloration. Short first primary, long straight hind claw and white in outer tail-feathers are specific distinctions.

FIELD-CHARACTERS.—Of stouter build and larger size than Pipits, and lacking their nimble gait, can hardly be confused with any other species when on ground, for its longer tail and obscure eye-stripe distinguish it from Wood-Lark. Characteristic song is normally uttered as bird ascends directly from ground, soars, often at height rendering it almost invisible, and then descends in spiral curve, but at times sings on ground or from fence-rail or bush. In winter gregarious ; white outer tail-feathers, and to a lesser degree greyish-white edging of inner margin of wings, are conspicuous as the birds pass with fluttering, undulating flight low over fields, uttering the while a liquid “chirrup.”

BREEDING-HABITS.—Nests always on ground in depression in grass or growing crops, occasionally on shingle or in sand. *Nest.*—Built of bents and grasses, lined finer grasses, sometimes a little hair. *Eggs.*—3-4, occasionally 5. Ground-colour dull greyish-white, sometimes greenish tinge, thickly and uniformly speckled or spotted olive or hair brown, sometimes with zone of dark spots. Varieties are almost devoid of markings or sparsely spotted. Average of 190 eggs, 23.2×16.8 mm. *Breeding-season.*—Generally from latter half April till July, exceptionally even in March. *Incubation.*—Lasts 14 days, by hen only. Two or three broods.

FOOD.—Mainly seeds, large quantities of seeds of various weeds eaten, and some damage done to corn and leaves of root-crops. Besides these, earthworms and insects (coleoptera and larvæ, orthoptera, hymenoptera, larvæ of lepidoptera and diptera, aphides), as well as millipedes, are eaten.

DISTRIBUTION.—*British Isles.*—Resident. Common and generally distributed but somewhat local in north-west parts of mainland Scotland. Many, if not most, home-bred birds leave in autumn.

MIGRATIONS.—*British Isles.*—Southward movement of breeding-birds begins in Shetlands and Hebrides late Aug., and is noticed on east coast (early date Aug. 22), continuing to early Nov. ; many cross Channel, beginning first week Sept. ; others pass to Ireland mid-Sept. onwards. In spring return migration along

same routes from late Feb. to early April. From mid-Sept. to early Nov. vast numbers from central Europe arrive between Tees and Kent; from north Europe throughout Oct. and early Nov. (main arrival Oct. 10 to 21) in Shetlands, and east coast Scotland and north-east coast England. Majority of central European birds pass on, following route taken by our residents, while north European birds form bulk of winter-residents, many crossing to Ireland. Spring-emigration from Ireland along same lines from mid-Feb. to late March. Our winter-visitors leave north-east and east coasts for north and central Europe from mid-Feb. to early May. Return movement of "passage-birds" observed second week March to mid-April. Occasional "weather movements" all three coasts in Dec., Jan. and Feb.

DISTRIBUTION.—*Abroad.*—Europe with exception of south Italy and south-east Europe, and Mediterranean islands, where it is represented by a very closely allied subspecies. Other allied forms inhabit west Siberia and other portions of north and middle Asia and north-west Africa. Casual in Bermuda.

66. *Alauda arvensis cinerascens* Ehmecke—THE EASTERN SKY-LARK.

ALAUDA CINERASCENS Ehmecke, Journ. f. Orn. 1904, p. 313 (author altered name because it had been preoccupied—*A. cinerea* Gmelin, Syst. Nat. i, 2, p. 798, 1789.—According to Article 36 of the Rules, Ehmecke's alteration must be accepted.)*

Alauda cinerea Ehmecke, Journ. f. Orn., 1903, p. 149 (Barnaul in W. Siberia).

Alauda arvensis cinerea, W. E. Clarke, Ann. Scot. Nat. Hist., 1906, p. 139; Hand-List B.B., p. 31 (1912).

DESCRIPTION.—*Adult male and female.* *Winter.*—Like *Alauda a. arvensis*, but upper-parts with light and dark colours more contrasted and cleaner looking, pale tips of feathers being whiter and fringes being pale pinkish-buff not so yellowish; under-parts much whiter without yellowish tinge, lower-breast, belly and under tail-coverts pure white; upper-breast pale pinkish-buff (not yellowish). *Summer.*—Difference in under-parts not so marked, but *A. a. cinerascens* always purer white, upper-parts considerably greyer with dark markings more clearly cut and more strongly contrasted.

Juvenile.—Like that of *A. a. arvensis* but less yellowish, tips of feathers of upper-parts being white and under-parts being white without yellowish tinge.

Measurements and structure.—As *A. a. arvensis*.

* I have formerly not fully recognized Art. 36 of the Rules, but now accept necessity of doing so.—E.H.

BREEDING-HABITS AND FOOD.—Not known to differ in any way from those of European Sky-Lark.

DISTRIBUTION.—*British Isles.*—Three. One Flannan Islands Light (O. Hebrides) Feb. 24, 1906 (*ut supra*). One Old Head of Kinsale Light (Cork) Oct. 7, 1910 (R. M. Barrington, *Brit. B.*, vi, p. 254), One Tuskar Light (Wexford) Oct. 5, 1911 (C. J. Patten, *Zool.*, 1913, p. 333).

DISTRIBUTION.—*Abroad.*—West Siberia, Turkestan, and parts of Persia. In winter farther south and as far west as Algeria.

Genus EREMOPHILA Boie.*

EREMOPHILA Boie, Isis, 1828, p. 322 (Type by designation: "*Alauda alpestris* L." Boie included three forms of what we now call *Eremophila* and Temminck's doubtful "*Kollyi*").

Old birds easily recognized by tuft of elongated and pointed feathers on sides of crown. Wings long and pointed, inner secondaries much shorter than primaries. Tail emarginate, upper tail-coverts reaching to middle of tail or further. Sexes differ a little, females being duller in colour, tufts on sides of crown less developed; young differs more strikingly than those of most other Larks. Breeding in north Europe, chiefly north of Polar circle, north and middle Asia to Himalayas, thence westwards to Caucasus, Asia Minor, Balkan Peninsula, Syria and in Africa in the northern part of the Sahara; also in North America, where, in addition to *E. a. alpestris* thirteen subspecies are recognized in the latest *A.O.U. Checklist*, and Andes of Colombia.

EREMOPHILA ALPESTRIS†

67. *Eremophila alpestris flava* (Gm.)—THE SHORE-LARK.

ALAUDA FLAVA Gmelin, Syst. Nat., i, 2, p. 800 (1789—Typical locality: Siberia).

Otocorys alpestris (Linnæus), Yarrell, i, p. 604; Saunders, p. 259.

DESCRIPTION.—*Adult male.* *Winter.*—Fore-head and broad superciliary stripe (extending behind eye) pale yellow, more or less obscured by dusky-brown tips to the feathers; broad band across

* *Eremophila* has been rejected by the majority of authors, because *Eremophilus* had previously been given to a genus of mammals. The two words are, however, easily distinguishable by ear and eye, and there is no rule demanding its rejection. The next oldest name *Phileremos* has been rejected as it had been preoccupied by *Phileremus*, and the third oldest name *Otocoris* (*Otocorys*) has been in use with most authors.—E.H.

† The name *alpestris* originally refers to a North American form, which, though very close to the one of the Old World, is separable.—E.H.

centre of crown black, somewhat obscured by yellowish tips of feathers ; on each side of crown over eye a tuft of narrow, elongated black feathers forming "horns" ; back of crown and nape brownish-pink, tinged yellowish and slightly mottled dusky ; hind-neck same but more pinkish ; mantle, scapulars, back and rump brown, indistinctly streaked dark brown ; upper tail-coverts with pinkish bases and whitish tips ; round nostrils, lores and extending in a broad stripe down sides of throat black (feathers narrowly tipped yellowish) ; ear-coverts dusky-brown with pale yellow bases ; chin and upper-throat extending round sides at base of



Shore-Lark (*Eremophila a. flava*).

♂ ad. spring.

neck pale yellow ; lower-throat and across upper-breast broad band of black feathers lightly tipped yellowish-white ; rest of breast white (sometimes tinged yellow) faintly marked dusky and the sides mostly brownish-pink ; belly, vent, under tail-coverts, axillaries and under wing-coverts white ; flanks brown, tinged pink and streaked dark brown ; tail-feathers : central pair brown with dark centres and pinkish bases, rest brown-black narrowly fringed whitish at tips, outer pair with more white at tip and most of outer web white, penultimate pair with outer web fringed white ; primaries and secondaries dark brown, narrowly tipped and fringed on outer webs whitish and on basal half of inner webs broadly fringed white, outer (2nd) primary with most of outer web white, inner secondaries broadly fringed brown ; primary-coverts, outer webs pinkish-brown fringed whitish, inner webs blackish ; greater coverts dark brown fringed pale brown and tipped whitish ; median coverts same but with brownish-pink centres ; lesser coverts brownish-pink fringed ashy. This plumage is acquired by complete moult in early autumn. *Summer*.—No moult. By abrasion of tips and fringes of feathers, yellow of fore-head becomes purer, black of crown, sides of head, throat and breast nearly uniform (but often with traces of pale tips on crown), back of crown and especially nape, upper tail-coverts and sides of breast much pinker (in summer—June—yellow of head usually becomes whitish)

Adult female. Winter.—Resembling male but less yellow on fore-head ; black on crown much restricted ; feathers of "horns" much shorter and tipped brown ; nape and hind-neck less pink more brown ; rest of upper-parts with darker and more prominent streaks ; yellow of throat duller, and black somewhat restricted and not so intense. *Summer*.—Abrasion makes differences more marked, crown being only spotted black, nape browner and streaked, upper-parts much more streaked dark brown.

Nestling.—Down, pale straw colour, long ; distribution, inner

supra-orbital, occipital, (? spinal), humeral, ulnar, femoral and crural (description from half-moulted skin).

Juvenile.—Whole upper-parts black-brown fringed buff and each feather with a buffish- or yellowish-white spot at tip; upper tail-coverts pinkish at base; short line behind eye yellowish-white; ear-coverts and lines down sides of throat black-brown, spotted yellowish-white; chin and throat pale yellow to yellowish-white, feathers faintly tipped dusky-black; breast and flanks dusky black-brown, feathers fringed and tipped yellowish- or buffish-white; rest of under-parts white or yellowish-white; tail- and wing-feathers much as adult but more widely and evenly fringed and tipped buffish-white; all wing-coverts black-brown fringed buff and broadly tipped buffish-white.

First winter.—Like adults. The juvenile plumage is completely (including wings and tail) moulted in August.

Measurements and structure.—♂ wing 108-112 mm., tail 66-75, tarsus 21-23, bill from skull 12-14 (12 measured). ♀ wing 101-105. Primaries: 1st minute and less than half primary-coverts, 3rd longest, 2nd often as long (very rarely longer), sometimes 1-2 mm. shorter, 4th 1-4 shorter, 5th 8-13 shorter, 6th 18-26 shorter; 3rd to 5th emarginated outer webs. Secondaries between 10th and 7th primaries, tips notched. In juvenile 1st primary is broader, not so pointed and longer, being about two-thirds as long as primary-coverts. Tail slightly forked. Bill strong. Small, fine rictal and nasal bristles and short feathers covering nostrils. Hind claw strong, straight, spike-shaped and about one-third longer than hind toe.

Soft parts.—Bill greyish horn with black tip and yellowish at base of under mandible; legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*E. a. alpestris* (North America) is very similar but has larger bill and browner wing-coverts, *E. a. atlas* (Atlas Mts.) has sandy-brown back and wing-coverts, *E. a. bilopha* (Sahara) has more uniform reddish-sandy upper-parts and white fore-head and chin, *E. a. penicillata* (Caucasus, Asia Minor) has greyer upper-parts and black bands on sides of throat are broad and join black of breast, *E. a. balcanica* (Balkans, Turkey, Greece) very similar to last but with purer grey upper-parts and deeper yellow fore-head and chin, *E. a. bicornis* (Lebanon) like *E. a. penicillata* but with white fore-head and chin; nine other forms are found in Asia and fourteen in North America. Black "horns," yellow chin, black breast-band and pinkish hind-neck easily distinguish it from other British Larks.

FIELD-CHARACTERS.—In this country usually in stubble-fields, or among bents near sea, also often amongst seaweed thrown up by tide. Pinkish tinge of upper-parts, yellowish chin and black gorget and whitish, almost unstreaked, under-parts make it clearly

distinguishable though it may easily be passed over unless carefully looked at. Usually not shy in my experience, but is stated to be so in Fair Isle by Mr. W. E. Clarke. Flies low, and has rather loud, sharp call-note. Its song is pleasing but slight, but is probably not to be heard in this country. Collett states that it gives its full song only when perched, and when mounting and descending with wavy motion in the air it only utters intermittent notes (H.F.W.).

BREEDING-HABITS.—Nests in hollow of ground in peaty soil, sheltered by grass tussock, and often near stone. *Nest*.—Loosely built of dry grasses and stalks, lined with down of willow, arctic coltsfoot, and cotton rush or reindeer hair. *Eggs*.—Usually 4, sometimes 3 to 5. Variable, ground greenish-white, thickly freckled fine yellowish-brown spots, paler as a rule than Sky-Lark's, sometimes with few bold spots or dark zone and not uncommonly a blackish hair-line. Average of 100 eggs, 22.7×16.2 mm. *Breeding-season*.—From mid-May to July in north Europe, often not before June. *Incubation*.—Period unknown. Two broods reared as a rule.

FOOD.—In summer seeds, buds and insects, especially small diptera and coleoptera and their larvæ. During autumn and winter small mollusca and crustacea also eaten.

DISTRIBUTION.—*England*.—Winter-visitor arriving first week Oct. (early date Sept. 11) to mid-Nov. returning mid-March to third week April. First noticed Norfolk, March 1830. Was irregular winter-visitor to east and south coasts until 1879, when considerable visitation occurred, and subsequently has increased and is now annual autumn to spring visitor east coast from Yorks. to Kent. Along south coast occasional; elsewhere very rare. *Wales*.—Very rare vagrant. *Scotland*.—First recorded East Lothian Jan., 1859, subsequently uncommonly, as far north as Fife; of recent years annually small numbers autumn and occasionally spring Fair Isle; a few in autumns 1907, 1909, and 1913, Isle of May; 1913 Pentland Skerries and Auskerry (Orkney); 1915, spring Hoy High, autumn Swona (Orkney). Unknown in west. *Ireland*.—One Wicklow Head, Nov. 4, 1910 (R. M. Barrington, *Brit. B.*, iv, p. 215).

DISTRIBUTION.—*Abroad*.—North Europe, chiefly north of Arctic Circle, and north Asia. Represented in America by a number of allied forms. (Hartert treats also all the Horned Larks of Asia and north-west Africa as forms of *E. alpestris*.)

FAMILY MOTACILLIDÆ.

Comprises the Pipits and Wagtails. Smaller *Oscines* (see p. 6), partly (Pipits) very similar to Larks in general appearance, but distinguished by the sides of the tarsus being covered with an

unbroken sheath. Front of tarsus with more or less fused scutes, sometimes in old birds only distinct on lower part. Wings with nine primaries as in *Fringillidæ* (p. 42), secondaries more or less elongated, often fully as long as longest primaries. Tail generally rather long, twelve rectrices. Bill thin and slender. Plumage soft. Two moults, a complete one late in summer, an incomplete one end of winter and early spring; this at least in all European species. Mostly terrestrial, walking like Larks, not hopping like Thrushes. Nests on ground or in hollows in buildings, banks, trees, etc. Eggs spotted. Nearly cosmopolitan, richest in Palæ-arctic region. Northern species migratory.

Key to genera of family MOTACILLIDÆ.

Tail shorter than wings, upper-parts brown, mostly spotted	<i>Anthus</i> , p. 171
Tail as long as, or longer than, wings, upper-parts uniform grey, black or greenish	<i>Motacilla</i> , p. 191

Genus ANTHUS Bechst.

ANTHUS Bechstein, Gem. Naturg. Deutschl., II, pp. 247, 302, 465 (1805)
—Type by subsequent designation—Mathews, 1915—*A. campestris*).

Appearance of most species Lark-like, upper-parts spotted or streaked. Tail as a rule considerably shorter than wing, secondaries as long as primaries. Sexes alike, young much like adults. Eggs spotted, Lark-like. Nearly cosmopolitan, but absent from islands in Pacific Ocean. Numerous in Palæarctic region. Ten species Palæarctic, some with several subspecies, six in Europe.

Key to species of genus ANTHUS.

1	Tarsus and foot longer and stronger, tarsus over 30 mm.	<i>A. r. richardi</i> , p. 172
	Tarsus and foot shorter and weaker, tarsus under 30 mm.	2
2	Blackish-brown spots on upper-parts and breast, very conspicuous and sharply defined	3
	Darker centres to feathers of upper-parts not obvious and ill-defined, those on breast as a rule not sharply defined	5
3	Hind claw considerably curved, equal to or shorter than hind toe	<i>A. trivialis</i> , p. 176
	Hind claw slightly curved, longer than hind toe	4

- | | | | |
|---|---|---|-------------------------------|
| 4 | { | Distinct streaks on rump and upper tail-coverts | <i>A. cervinus</i> , p. 182 |
| | | Rump and upper tail-coverts almost uniform or with only indistinct dark streaks . . | <i>A. pratensis</i> , p. 179 |
| 5 | { | Upper-parts sandy brown | <i>A. campestris</i> , p. 174 |
| | | Upper-parts of a warm olivaceous or rufescent brown | <i>A. spinoletta</i> , p. 184 |

ANTHUS RICHARDI

68. *Anthus richardi richardi* Vieill.—RICHARD'S PIPIT.

ANTHUS RICHARDI Vieillot, Nouv. Dict. d'Hist. Nat., nouv. éd., xxvi, p. 491 (1818—France).

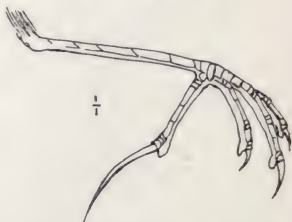
Anthus richardi Vieillot, Yarrell, I, p. 598; Saunders, p. 139.

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, neck, mantle and scapulars brown to buffish-brown, broadly streaked black-brown; back and rump almost uniform brown; upper tail-coverts same but with rather darker centres; lores buffish-white; broad stripes over and behind eyes rather more buff; ear-coverts buffish-brown, streaked dark brown; chin and upper-throat buffish-white; lower-throat and upper-breast buff, streaked black-brown, streaks extending up sides of throat in form of moustachial stripes; lower-breast, belly and under tail-coverts whitish-buff; flanks deep buff; axillaries and under wing-coverts smoke-grey edged buff; tail brown-black, central pair broadly edged brown, outer pair white with inner web fringed brown-black, next pair with shaft and sometimes most of outer web black-brown and less white on inner web; primaries dark brown narrowly fringed pale brown on outer webs and broadly whitish on basal half of inner webs; secondaries, primary-, greater and median coverts black-brown edged and tipped buff; lesser wing-coverts more uniform buff. This plumage is acquired by complete moult in Aug.-Sept.

Summer.—The body-plumage, most wing-coverts, innermost secondaries and central pair of tail-feathers (occasionally outer pair also) are moulted March-May but not primary-coverts nor rest of wing- or tail-feathers. N.B.—The extent of moult varies individually. The new plumage is like the old.

Nestling.—(Not examined.)

Juvenile.—Feathers of upper-parts including wing-coverts, inner



Richard's Pipit (*Anthus r. richardi*).

secondaries, upper tail-coverts and central tail-feathers brown-black evenly margined pale buff to buffish-white; under-parts buffish-white (whiter than adults), usually more streaked on upper-breast and sides of throat than adult; flanks buff, lightly streaked dark brown; rest of tail and wings like adults. N.B.—The pale margins of the feathers of the upper-parts give the juvenile the appearance of a juvenile Lark.

First winter (Plate 6).—Like adults but with many pale-margined juvenile feathers, especially wing-coverts and innermost secondaries. The juvenile body-feathers and a few wing-coverts are usually moulted in Aug.-Nov., but not rest of wings or tail. Frequently some juvenile body-feathers are retained until spring moult. *Summer*.—Like adults, the moult being rather more complete and the remaining juvenile wing-coverts, innermost secondaries and central tail-feathers being apparently always moulted but not primary-coverts nor rest of wing- and tail-feathers.

Measurements and structure.—♂ wing 92-97 mm., tail 72-78, tarsus 31-32, bill from skull 15-16, hind claw 13-20, considerably longer than hind toe, slightly curved (12 measured). ♀ wing 85-92. Primaries: 1st minute about half primary-coverts, 2nd to 4th equal and longest, 5th 2-3 mm. shorter, 6th 10-14 shorter; 3rd to 5th emarginated outer webs. Secondaries between 9th and 6th primaries, tips square, slightly notched, longest inner secondary in winter usually a little shorter than 5th primary, after spring moult often as long as longest primary. Tail very slightly forked. Bill fine, wider and flattish base. A few longish rictal bristles, nostrils uncovered.

Soft parts.—Bill, upper mandible dark brown, lower paler; legs and feet pale flesh or pale yellowish-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*A. r. striolatus* (India) has shorter bill and hind claw. Distinguished from Meadow-, Tree-, and Red-throated Pipits by its much larger size and less streaked breast. Somewhat similar to *A. c. campestris* but tarsus and foot much longer, upper-breast and sides of throat more streaked and upper-parts much less uniform. Juvenile closely resembles juvenile *A. c. campestris* in coloration, but tarsus, toes and claws are much longer.

BREEDING-HABITS.—Nests in hollow on ground in plains, sheltered by tussock of grass. *Nest*.—Built dead grasses and some moss. *Eggs*.—4-6, rather variable, ground ranging from greenish-grey to dirty pink, thickly and as a rule uniformly mottled with olive or reddish-brown spots and grey shell-marks. Average of 24 eggs, 21.38×16.4 mm. *Breeding-season*.—From beginning June to July in Siberia. *Incubation*.—Period unknown; hen shot from eggs. Two broods (Dybowski).

FOOD.—Worms, orthoptera, and occasionally a butterfly or insect

taken in winter-quarters (Legge). Insects are main food in summer.

DISTRIBUTION.—*British Isles.*—Vagrant. Over eighty recorded in various parts England, but chiefly in south coast counties and Norfolk. In Scotland, single birds Perth, Kirkcudbright and Midlothian, several autumn 1908, one Sept. 26, 1909, two Oct. 6, 1911, and one Oct. 2, 1912, Fair Isle. In Ireland, one Lucan (Dublin) Nov. 21, 1907, one Howth (Dublin) Oct. 23, 1911.

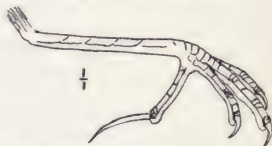
DISTRIBUTION.—*Abroad.*—North Asia. Migrant, wintering in tropical India and south China, and frequently visiting Europe, even west Europe, and Mediterranean countries. An allied race breeds in south Mongolia and China south to Himalayas and Khasia Hills.

ANTHUS CAMPESTRIS

69. *Anthus campestris* (L.)—THE TAWNY PIPIT.

ALAUDA CAMPESTRIS Linnæus, Syst. Nat., ed. x, i, p. 166 (1758—
“Habitat in Europa.” Restricted typical locality: Sweden).
Anthus campestris (Linnæus), Yarrell, i, p. 592; Saunders, p. 137.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head and crown pale sandy-brown (often slightly tinged greyish) somewhat indistinctly streaked black-brown; mantle, scapulars, and upper tail-coverts same but more uniform with only very fine streaks; rump same but unstreaked;



Tawny Pipit (*Anthus c. campestris*).

stripe from base of bill, over eye to back of crown cream-colour; lores and ear-coverts brown and cream; chin and throat yellowish to whitish cream-colour usually with an interrupted dark brown moustachial stripe but sometimes without any dark marks; breast more buff, usually with a few short dark brown streaks but sometimes unstreaked; flanks buff; belly, under tail-coverts and axillaries cream-colour to buffish-white; tail dark brown, central pair broadly, and rest very narrowly edged and tipped pale buff, outermost pair with outer web and most of inner (in wedge-shape) whitish to buffish cream-colour, next (penultimate) pair with brown shaft and smaller wedge of cream on inner web (N.B.—Amount of cream-colour varies considerably); wing-feathers dark brown edged and tipped whitish very narrowly on outer, and more broadly on inner webs; inner secondaries and greater coverts broadly edged and tipped buff; median coverts same but with blacker centres; lesser coverts pale sandy-brown; primary-coverts as primaries. This

plumage is acquired by complete moult in Aug.-Nov. *Summer*.—The body-plumage, most wing-coverts and occasionally some innermost secondaries and central tail-feathers are moulted March-April, but not primary-coverts nor rest of wing- and tail-feathers. The new plumage is like the old, but when much worn (June and July) the upper-parts become less sandy and darker, more pinkish-brown, and pale edges wearing off inner secondaries and wing-coverts give it a still more uniform appearance, while under-parts become paler and small streaks on breast rather more prominent.

Nestling.—(Not examined.)

Juvenile.—Feathers of upper-parts including wing-coverts, inner secondaries and central tail-feathers dark reddish-brown evenly margined pale buff to buffish-white; upper tail-coverts buff with broad dark brown mesial streaks; under-parts much as adults but with more and broader dark brown streaks on breast and distinct moustachial stripes; flanks lightly streaked; rest of tail and wings like adults. N.B.—In this plumage closely resembles juvenile Richard's Pipit, but may be at once recognized by its smaller tarsus and foot.

First winter.—Like adults but frequently with many pale-margined juvenile feathers on the body and always with some in wing-coverts and inner secondaries. The juvenile body-feathers and a varying number of wing-coverts and innermost secondaries and sometimes the central tail-feathers are moulted in July-Nov. N.B.—Extent of moult and number of juvenile feathers retained varies considerably individually. *Summer*.—Like adults and moult the same. Remaining juvenile body-feathers and median and lesser wing-coverts appear to be always moulted, but not necessarily the innermost secondaries and central tail-feathers, the edges of which become so worn as to make them indistinguishable from those of adults.

Measurements and structure.—♂ wing 89-98 mm., tail 67-74, tarsus 26-29, bill from skull 15-18, hind claw 7-10, about as long as hind toe, curved (12 measured). ♀ wing 81-89. Primaries: 1st minute and less than half primary-coverts, 3rd and 4th equal and longest, 2nd as long or 1-2 mm. shorter, 5th 1-3 shorter, 6th 10-13 shorter; 3rd to 5th emarginated outer webs. Secondaries between 8th and 10th primaries, tips square slightly notched, longest inner secondary as long as longest primary or between 5th and 6th. Tail very slightly forked. Bill fine, wider and flatter at base. A few fine rictal bristles, nostrils uncovered.

Soft parts.—Bill, upper mandible and tip of lower dark brown, rest of lower flesh; legs and feet bright yellowish-flesh; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*A. c. minor* (north-west India) is a doubtful form. *A. sordidus captus* (Palestine, Persia, Baluchistan) is very similar but larger and the outer tail-feathers, especially

the penultimate pair, have less cream-colour. *A. s. jerdoni* (Himalayas) is darker and browner on upper-parts. Distinguished in adult plumage from all other British Pipits by the uniform coloration of its upper-parts.

FIELD-CHARACTERS.—Haunts sand-dunes, plains and barren hill-sides. Song, metallic cadence uttered during flight. Stands high on legs and looks larger than any other British Pipit except Richard's; also runs with great speed. Throat and under-surface uniform pale buff-cream; broad whitish eye-stripe (F.C.R.J.).

BREEDING-HABITS.—Breeds on hillsides and barren plains, nesting in depression of ground sheltered by tussock, bush or vine. *Nest.*—Neatly built of grasses, roots, etc., lined some hair. *Eggs.*—Generally 4-5, rarely 6, closely spotted and mottled with brown, and violet shell-marks, on whitish ground. Occasionally markings form cap or zone. Average of 137 eggs, 21.9×15.7 mm. *Breeding-season.*—Begins mid-April in north Africa and end of May or early June in central Europe. Probably two broods sometimes, as eggs have been found in July. *Incubation.*—Lasts 13-14 days; performed by hen only (Naumann).

FOOD.—Chiefly insects (coleoptera, orthoptera, diptera, and their larvæ, also larvæ of lepidoptera), all taken on the ground; no seeds.

DISTRIBUTION.—*British Isles.*—Thirty or more in past fifty years in autumn on Sussex coast, where Mr. M. J. Nicoll in 1904 considered it an annual visitor, and had evidence that a pair bred 1905, and again possibly 1906. Elsewhere very rare straggler—one Scilly Isles, Sept. 1868; one Yorks., Nov. 20, 1869; one Hants., 1879; one Lowestoft (Suffolk) Sept. 2, 1890; one Yarmouth (Norfolk) Oct. 9, 1897; one Cornwall Sept. 16, 1899; one Cley (Norfolk) Sept. 15, 1910.

DISTRIBUTION.—*Abroad.*—Europe from south and middle Sweden to Mediterranean and north-west Africa, east to central Asia. In winter in tropical Africa and north-west India. The existence of a smaller form is doubtful.

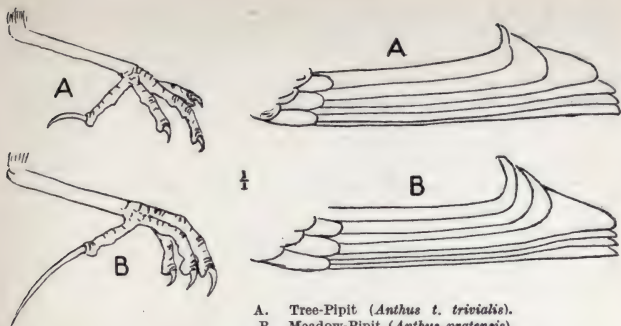
ANTHUS TRIVIALIS

70. *Anthus trivialis trivialis* (L.)—THE TREE-PIBIT.

ALAUDA TRIVIALIS Linnæus, Syst. Nat., ed. x, i, p. 166 (1758—Sweden).

Anthus arboreus MacGillivray, Hist. Brit. B., II, p. 188; Thompson B. Ireland, I, p. 224.

Anthus trivialis (Linnæus), Yarrell, I, p. 569; Saunders, p. 131.



A. Tree-Pipit (*Anthus t. trivialis*).
B. Meadow-Pipit (*Anthus pratensis*).

DESCRIPTION.—*Adult male and female.* *Winter.*—Crown, nape, mantle and back olive or buffish-brown, streaked black-brown; rump and upper tail-coverts same but almost uniform with very fine indistinct streaks; superciliary stripe yellowish-buff; ear-coverts buff and brown; chin pale buff; fairly distinct black-brown moustachial stripes; sides of throat, breast and flanks yellowish-buff, streaked black-brown, but centre of throat uniform buff; centre of lower-breast and belly white; under tail-coverts pale buff; axillaries dusky-grey fringed very pale buff; tail and wings as in *A. pratensis*. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—A moult takes place from Jan. to March to same extent as in *A. pratensis*, and new plumage is like winter. In worn plumage dark markings of upper- and under-parts are accentuated and throat, breast, and flanks less buff.

Nestling.—Down dark smoke-grey, fairly long and plentiful; distribution, inner and outer supra-orbital, occipital, spinal, humeral, ulnar, femoral, crural and one or two filaments on ventral. Mouth, inside orange, edges and spurs of tongue and barbs on palate yellow; externally flanges pale yellow. No spots.

Juvenile.—Resembling adult but more buff not so olive and more prominently streaked on upper-parts, flanks with only a few very fine dark streaks; breast, flanks and under tail-coverts washed with a warmer (not so yellowish) buff as adult.

First winter.—Like adult. The juvenile body-feathers, lesser and median wing-coverts, some inner greater coverts and innermost secondaries and occasionally central pair of tail-feathers are moulted July-Sept., but not primary-coverts nor rest of greater coverts, wings and tail. N.B.—Some examples retain a number of juvenile feathers until they reach winter-quarters. *First summer.*—Like adult and moult same.

Measurements and structure.—♂ wing 84-90 mm., tail 55-65,

tarsus 20-21.5, bill from skull 13.5-15, hind claw 7.5-9, considerably curved and equal to or shorter than hind toe (12 measured). ♀ wing 80-87. Primaries: 1st minute, about half primary-coverts, 2nd to 4th about equal (greatest difference 1 mm.) and longest, 5th 2.5-5 mm. shorter, 6th 11-14 shorter; 3rd to 5th emarginated outer webs. Secondaries between 7th and 10th primaries, tips fairly square, longest inner secondary generally equal to 5th primary but in summer plumage often as long as longest primary. Tail slightly forked. Bill rather fine with base wider and flatter. A few fine short rectal bristles. Nostrils uncovered.

Soft parts.—Bill, upper and tip of lower mandible dark brown, rest of lower pale flesh; legs and feet pale brownish-flesh (pinker than Meadow-Pipit); iris black-brown.

CHARACTERS AND ALLIED FORMS.—*A. t. hodgsoni* (*maculatus* Jerd. 1864 of authors, but not of Vieillot 1818) (Siberia, Japan to India and China) and *A. t. berezowskii* (Kansu) are generally much greener and more uniform on upper-parts and have wider and blacker streaks on under-parts, *A. t. haringtoni* (Kashmir) has wider, coarser bill and wider streaks on under-parts than typical form, *A. t. yunnanensis* (south-west China) has shorter bill. For specific distinctions see pp. 180-1.

FIELD-CHARACTERS.—Pipits differ from Larks in their more slender build, graceful carriage, and restless Wagtail-like activity, but resemble one another very closely in appearance, voice and demeanour. Very like Meadow-Pipit, but rather larger, tail longer, upper-parts warmer brown, spots on breast larger but fewer, and legs flesh-coloured. Inhabits wooded districts. Song sometimes uttered from tree-tops, but usually on wing as bird ascends perpendicularly from perch and then planes downwards with outspread wings and upturned and outspread tail; notes during descent “see-ar, see-ar, see-ar,” are characteristic. Call-note a hoarse “tsee.” Alarm-note, metallic “chip.”

BREEDING-HABITS.—Breeds in depression of ground on sides of railway cuttings, country lanes, hillsides, rough pastures and outskirts of woods, and haunts fertile, well-wooded districts. *Nest*.—Substantially built of dry grasses and bents, with moss in foundation, lined finer grasses and varying amount of hair. *Eggs*.—Usually 4 to 6, rarely 7 or even 8; extraordinarily variable. Three main types are reddish, brown, or grey in general appearance, but in each type eggs may be uniformly speckled, with well-defined zone or cap, or with blotches and streaks. Finely spotted eggs also have frequently a black hair-streak. Ground-colour varies from pale blue to pinkish, greenish, brownish or grey. Scarce varieties show few or no markings on blue ground. Average of 174 eggs, 20.09×15.1 mm. *Breeding-season*.—

Latter half of May and early June; occasionally early in May. One brood. *Incubation*.—Lasts 13-14 days, apparently by hen only.

FOOD.—Chiefly insects (small coleoptera, orthoptera, many species of diptera, hymenoptera, etc., as well as their larvæ), also spiders.

DISTRIBUTION.—*England and Wales*.—Summer-resident. Fairly distributed and common except west Cornwall, but occurs autumn and has bred on Scilly Isles. *Scotland*.—Plentiful south-west and fairly distributed elsewhere to central, but rarer northwards; very rare Sutherland, and does not breed Caithness, not recorded Shetlands, and only once or twice Orkneys and O. Hebrides until autumn 1910 when a good many St. Kilda and 1913 when quite abundant Aukerry, regular spring and autumn passage-migrant Fair Isle. *Ireland*.—One singing co. Galway May 21, 1914. Several Sept. and Oct. 1912, 1913 and 1915 Tuskar Rock (Wexford). One Sept. 1913 Rockabill (Dublin). Previously reported occurrences not authenticated.

DISTRIBUTION.—*Abroad*.—Europe from Tromsö and north Russia to north Spain, higher portions of Italy, and in small numbers to south-east Europe (mountains of Greece), in Asia to the Yenisei and Tian-Shan. Migrates in winter to Mediterranean, tropical Africa, and north-west India. Replaced by an allied race (often treated as separate species) in north-east Siberia, Japan, China and by others in Kashmir, Kansu and south-west China.

ANTHUS PRATENSIS

71. *Anthus pratensis* (L.)—THE MEADOW-PIBIT.

ALAUDA PRATENSIS Linnæus, Syst. Nat., ed. x, i, p. 166 (1758—"Habitat in Europæ pratis." Restricted typical locality: Sweden).

Anthus pratensis (Linnæus), Yarrell, i, p. 575; Saunders, p. 133.

DESCRIPTION.—*Adult male and female*. *Winter*.—Crown, nape, mantle and back olive, greenish-brown, or buffish-brown (occasionally pinkish-brown), streaked black-brown; rump and upper tail-coverts same but almost uniform with only very fine indistinct dark streaks; superciliary stripe greyish or yellowish-white; ear-coverts brown or yellowish-brown; chin, centre of throat, belly, and under tail-coverts whitish-grey or yellowish-buff (occasionally pinkish-buff); sides of throat, breast and flanks same but broadly streaked brown-black; axillaries dusky-grey fringed very pale yellow; tail-feathers black-brown, central pair fringed same colour as upper tail-coverts, outer pair with dusky-white outer web and large white wedge-shaped mark on inner

web, penultimate pair with small wedge-shaped white mark at tip of inner web, next pair usually with very small white mark at tip; primaries and secondaries black-brown, fringed on inner webs dusky-grey and on outer webs greenish or greyish-buff, inner secondaries and wing-coverts with paler buff (sometimes whitish) edgings and tips. This plumage is acquired by complete moult in Aug.-Oct. *Summer*.—All body-feathers, wing-coverts (some outer greater and median coverts occasionally do not moult and primary-coverts never do), innermost secondaries and central tail-feathers are moulted (exceptionally outer tail-feathers or all are moulted) but not other wing- or tail-feathers, from Jan. to March. New plumage is like winter, but as summer advances upper-parts become very dark and under-parts very pale and boldly streaked owing to edges and tips of feathers wearing away. N.B.—There is great individual variation in colour of under-parts and lighter portions of feathers of upper-parts both in winter and summer.

Nestling.—Down, brownish-grey, fairly long and plentiful; distribution, inner and outer supra-orbital, occipital, humeral, ulnar, spinal, femoral, crural and ventral, very scanty on two latter tracts. Mouth, inside carmine, externally flanges pale yellow. No tongue-spots, but tongue-spurs whitish.

Juvenile.—Closely resembling adult but with edgings of feathers of upper-parts smaller and dark markings more distinct, under-parts generally tinged yellow.

First winter.—Like adult. The juvenile body-feathers, lesser, median and some inner greater wing-coverts and innermost secondaries and occasionally central pair of tail-feathers are moulted July to Oct., but not primary-coverts nor rest of greater coverts wings and tail. *First summer*.—Like adult and moult same.

Measurements and structure.—♂ wing 77-85 mm., tail 58-64, tarsus 20-23, bill from skull 11.5-13.5, hind claw 10-14, slightly curved, longer than hind toe (12 measured). ♀ wing 74-79. Primaries: 1st minute, about half primary-coverts, 2nd to 5th nearly equal (greatest difference 1.5 mm.) and longest, 6th 8-11 shorter; 3rd to 5th emarginated outer webs. Secondaries between 7th and 10th primaries, tips fairly square, longest inner secondary usually between 5th and 6th primaries but sometimes as long as longest primaries. Tail and bill as in Tree-Pipit.

Soft parts.—Bill dark brown with pale brownish-flesh base; legs and feet pale brownish; iris black-brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. As compared to Tree-Pipit is rather smaller (looking decidedly shorter in life), has much longer and less curved hind claw, and 5th primary is equal to or within 1 mm. of longest, instead of 2.5-5 mm. shorter as in *A. trivialis*. In fresh plumage contrast between buff throat and breast and whitish belly is always more

marked in *A. trivialis*. Some rufous specimens of *A. pratensis* much resemble some first winter males and winter females of *A. cervinus*, for distinctions see p. 183 and Plate 6.

FIELD-CHARACTERS.—Closely resembles Tree-Pipit but rather smaller, legs brown, not flesh-coloured, and upper-parts olivaceous. Pure white outer tail-feathers conspicuous in flight. Inhabits wild moorlands, rough commons, and water-meadows. Rarely seen to perch on trees *except on migration*. Tinkling song, uttered in air, lacks the “see-ar, see-ar” of Tree-Pipit as bird descends. Call-note “ist.” Alarm-note a plaintive “peep.”

BREEDING-HABITS.—Nests in depression of ground, sometimes completely sheltered from above, in tussock of grass, clump of rushes, or in heather, and haunts marshlands, rough pastures and moors. *Nest.*—Built of dry grasses and bents, lined finer material and some horsehair. *Eggs.*—Usually 4 to 6, sometimes 7 in northern localities; variable, but less so than Tree-Pipit's, reddish types being very rare or absent. Ordinary types brown or grey in general appearance, finely mottled or more boldly marbled with varying shades of brown and ashy-grey; others are almost uniform ochreous or pale leaden grey, with dark hair-streak, and some are sparsely marked on a pale blue ground. Average of 143 eggs, 19.3×14.19 mm. *Breeding-season.*—From latter part of April onward in England, but later in the north. At least two broods usually reared, and eggs may be found late in July. *Incubation.*—Lasts 13-14 days, probably by hen only.

FOOD.—Insects (coleoptera and larvæ, small orthoptera, diptera, and larvæ, hemiptera, hymenoptera, and larvæ of lepidoptera). Also earthworms (Saxby), spiders, and occasionally seeds.

DISTRIBUTION.—*British Isles.*—Resident. Abundant throughout in open country, but majority leave higher and more northern situations in autumn and many emigrate.

MIGRATIONS.—*British Isles.*—Summer-residents from Hebrides and Highlands move south, chiefly down west coast, from about mid-Aug. to late Oct., and there is evidence of autumn-immigration in Ireland corresponding partly with this movement. Many, if not majority of, English breeding-birds pass south and west in autumn. Emigratory movements along south coast England from late Sept. to late Nov., and corresponding migratory movements in south-east Ireland have been noticed. From early Sept. to late Oct. large numbers of immigrants, many of which winter with us, while some pass on, arrive in northern Scottish isles, and between mid-Sept. and Nov. on east coast from Forfar to Kent. Return passage from end Feb. to mid-April on south coast Ireland, and from mid-March to mid-April on whole south coast England. Considerable evidence that more northerly breeding-birds pass

north along west coast or through western counties England, rather than east coast. Nestlings ringed in England have migrated to France and Portugal.

DISTRIBUTION.—*Abroad.*—Europe from Iceland, the Færoes, and North Cape to Pyrenees, Italy, and Carpathian Mountains, eastwards to west Siberia and north Turkestan. Migrant, wintering in the Mediterranean countries, north Africa, Syria, and Asia Minor. Casual in Greenland.

ANTHUS CERVINUS

72. *Anthus cervinus* (Pall.)—THE RED-THROATED PIPIT.

MOTACILLA CERVINA Pallas, Zoogr. Rosso-As., I, p. 511 (1827—Siberia).
Anthus cervinus (Pallas), Saunders, p. 135.

DESCRIPTION.—*Adult male.* *Winter.*—Whole upper-parts, including rump and upper tail-coverts, greyish- to buffish-brown, broadly streaked black-brown, each feather being black-brown fringed buffish- or greyish-brown; lores superciliary stripe, chin and throat uniform pearly- to buffish-pink with a few brown-black streaks forming indefinite moustachial stripes; ear-coverts buffish-brown; breast and flanks pale buff or pale pinkish-buff broadly streaked brown-black; belly and under tail-coverts uniform pale buff; axillaries dusky grey, fringed pale buff; tail-feathers black-brown, central pair fringed as upper tail-coverts, outer pair with dusky-white outer web and large white wedge-shaped mark on inner web, penultimate pair with small wedge-shaped white mark at tip of inner web, next pair sometimes with very small white mark at tip; primaries and secondaries black-brown fringed on inner webs dusky-grey, on outer pale buff; inner secondaries, greater and median coverts with broader and paler edgings and tips. This plumage is acquired by complete moult in July-Aug. *Summer.*—A moult like that of Meadow-Pipit takes place January to April. Upper-breast becomes either uniform pink like throat, or with a few narrow black-brown streaks, or buffish-pink streaked as heavily as in winter (amount of streaking varies considerably), rest of plumage as in winter but in late summer by abrasion upper-parts become darker and under-parts paler.

Adult female. *Winter.*—Like male but lores, eye-stripe, chin and throat whitish-buff without pink. *Summer.*—Some specimens indistinguishable from males but very rarely so uniform pink on breast as some males, usually chin and throat are more buff and less pink than in male, and breast with scarcely any pink and much streaked like male in winter. In late summer chin and throat often become whitish-buff only tinged pink.

Nestling.—Down, greyish-black; distribution, inner and outer

supra-orbital, occipital, humeral spinal, ulnar, femoral, and crural (spirit specimen) (C. B. Ticehurst, *Brit. B.*, II. p. 191).

Juvenile.—Much resembling adult winter female but with pale edgings of feathers of upper-parts rather smaller and more buffish; chin buffish-white; sides of throat heavily streaked black-brown like breast and flanks, buff of under-parts more yellowish than adult winter female.

First winter. Male.—Much like adult winter female but chin and throat often tinged buffish-pink. The juvenile body-feathers and lesser wing-coverts are moulted in August but apparently not rest of wing-coverts nor remiges and rectrices. N.B.—First summer males and first winter and summer females apparently cannot be distinguished from adults; those males with much streaking on breast and those females with little pink on throat may be first summer, but I know of no way of proving this.

Measurements and structure.—♂ wing 82-90 mm., tail 59-63, tarsus 21-23, bill from skull 11.5-13, hind claw 10-14, slightly curved, longer than hind toe (12 measured). ♀ wing 79-84. Primaries: 1st minute less than half primary-coverts, 3rd longest, 2nd and 4th often as long, sometimes 1 mm. shorter, 5th 1-3 shorter, 6th 10-13 shorter; 3rd to 5th emarginated outer webs. Secondaries between 8th and 10th primaries, tips fairly square, longest inner secondary usually between 5th and 6th primaries but sometimes when freshly moulted in spring as long as longest primary. Tail and bill as Tree-Pipit.

Soft parts.—Bill dark brown, yellowish-flesh at base of lower mandible; legs and feet yellowish- or brownish-flesh; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies recognized. Pink chin and throat of adult in summer very distinctive. In all plumages differs from Meadow-Pipit by the distinct streaks on rump and upper tail-coverts, feathers of these parts having large dark centres like those of rest of upper-parts instead of indistinct narrow dark centres as in Meadow-Pipit (see Plate 6), also upper-parts and edgings of wing-feathers are never so greenish as in Meadow-Pipit. In juvenile throat is also more streaked than in Meadow-Pipit.

FIELD-CHARACTERS.—In summer found in wooded country as well as on the scrub-covered patches on the high Fjeld, but more numerous on the latter. Often side by side with *A. pratensis*. Takes long flights high in the air singing, like other Pipits, but remains longer in the air and mounts higher. Descends also in Pipit fashion and settles on bushes. The call-note is distinctive. Mr. M. J. Nicoll describes it as a long-drawn "cheep" and "more like the call of a Reed-Bunting than anything else I know." Capt. Lynes defines it as a musical "chig" as against the squeaky "peet" of the Meadow-Pipit. In spring and summer rusty-red of throat and

breast is distinctive. In autumn the dark-centred rump-feathers and upper tail-coverts should be looked for (N.F.T.).

BREEDING-HABITS.—Haunts swampy ground, nesting in recesses in sides of hummocks, sometimes sheltered by dwarf scrub. *Nest.*—Built of dry grasses and bents, lined finer grasses and occasionally hair, but no feathers. *Eggs.*—Usually 5 or 6, rarely 7, extremely variable, ranging from evenly freckled markings on blue-green ground to almost uniform ochreous with a dark hair-line, or with rich mahogany-red cloudings, or bold sepia markings on olive-grey ground. Average of 100 eggs, 19.2×12.2 mm. *Breeding-season.*—From about mid-June to early July. One brood. *Incubation.*—Exact period unknown; hen found incubating.

FOOD.—Principally insects and their larvæ (diptera, coleoptera, etc.), also small worms, and in winter also fresh water mollusca and grass-seeds.

DISTRIBUTION.—*British Isles.*—Twelve. One Unst (Shetlands), May 4, 1854. One St. Leonards (Sussex), Nov. 13, 1895 (Saunders, p. 135). One Achill (Mayo), May 26th, 1895 (*Bull. B.O.C.*, XII, p. 15). One Ninfield (Sussex), Nov. 26, 1901 (*Bull. B.O.C.*, XII, p. 35). Two autumn, 1908, Fair Isle (*Ann. S.N.H.*, 1909, p. 72). One Rother Marshes (Kent), April 29, 1909 (*Hist. Birds Kent*, p. 104). St. Kilda, one seen and heard Sept. 21, 1910, one seen Oct. 8, 1911 (W. E. Clarke, *Studies in Bird Migration*, II, p. 212). Two Hooe (Sussex), May 22, 1913 (*Brit. B.*, VII, p. 52). One Auskerry (Orkney), Oct. 1, 1913 (*Scot. Nat.*, 1914, p. 7). [Specimens from Brighton, 1884, and Rainham, 1880 (Saunders, p. 135) are *A. pratensis* (*Brit. B.*, II, pp. 278-9), as also one from Donegal, Aug., 1898.]

DISTRIBUTION.—*Abroad.*—Breeds in high north of Europe and Asia. Migrant, wintering in India (in small numbers even in Malay Archipelago), south Arabia, Nubia, and Egypt to east Africa. Rare or irregular visitor to west Europe and north-west Africa. Casual in Aleutian Isles and south California.

ANTHUS SPINOLETTA

73. *Anthus spinoletta spinoletta* (L.)—THE WATER-PIBIT.

ALAUDA SPINOLETTA Linnaeus, Syst. Nat., ed. x, i, p. 166 (1758—Italy).

Anthus spinoletta, Seebohm, Hist. Brit. B., II, p. 248.

Anthus spipoletta (Linnaeus), Yarrell, I, p. 581; Saunders, p. 141.

DESCRIPTION.—*Adult male and female.* *Winter.*—Resembling *A. s. petrosus* (see p. 188), but upper-parts considerably more warm brown and without greenish-olive tinge; rump uniform warm brown; eye-stripe rather more distinct and whiter; under-parts much purer white and the dark streaks warm brown instead of

olive-brown; axillaries whiter; tail: outer pair with outer web whitish and wedge on inner web white, next pair with a small white mark at tip, and next pair sometimes with very small white mark; wings as *A. s. petrosus* but fringes warm brown and tips of coverts very pale brown (when worn whitish). This plumage is acquired by complete moult in Aug.-Sept. *Summer*.—The body-plumage, usually some innermost secondaries, and middle tail-feathers, and often some wing-coverts are moulted in March-April. Head and back of neck become grey tinged brown; rest of upper-parts greyish-brown; eye-stripe white (sometimes tinged pink) broader and more distinct than in winter; ear-coverts greyish-brown; belly and under tail-coverts whitish; rest of under-parts pale buffish-pink, usually unstreaked except for a few fine streaks on flanks and an occasional winter streaked feather remaining on breast (such feathers seem more frequent in females, which do not usually become so pink as males).

Nestling.—(Not examined.)

Juvenile.—Like that of *A. s. petrosus* but upper-parts more warm brown and without greenish tinge, much like winter adult but with dark centres of feathers of crown and mantle more marked; under-parts whiter than in *A. s. petrosus*, streaks narrower and more blackish-brown than in adult winter; tail- and wing-feathers as adult.

First winter.—Like adults. The juvenile body-plumage, lesser wing-coverts and usually median and some inner greater wing-coverts and some innermost secondaries are moulted in Aug. *First summer*.—Like adult and moult the same.

Measurements and structure.—♂ wing 87-93 mm., tail 65-70; tarsus 24-25, bill from skull 14-16 (12 measured). ♀ wing, 82-89. *Structure* as in *A. s. petrosus*.

Soft parts.—Bill brown-black with base of lower mandible yellowish-flesh (winter) all brown-black (summer); legs and feet dark flesh-brown; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*A. s. petrosus*, *littoralis*, and *kleinschmidti* have pale portions of outer tail-feathers and also axillaries smoke-coloured instead of white, besides other differences; *A. s. rubescens* has buff under-parts; *A. s. coutellii* (Persia, Palestine, Egypt) in winter has greyer crown and paler edgings and darker centres to feathers of mantle and more pinkish-buff, not such white under-parts, in summer under-parts paler pink; *A. s. blakistoni* (central Asia) is like *coutellii* but in winter paler brown on upper-parts and still paler in summer; *A. s. japonicus* (Kamtschatka, east Siberia) in winter is darker brown than any other form and has more blackish and distinct streaks on under-parts, in summer under-parts are buff, not pink, with blackish streaks. All Water- and Rock-Pipits occurring in British Isles have darker legs and feet than other European Pipits.

BREEDING-HABITS.—Nests at high elevations, under tussocks, or in crevice of rocks, sometimes under shelter of bush or in depression of ground. *Nest.*—Built of grasses and alpine plants, lined with finer bents, sometimes few horsehairs or feathers. *Eggs.*—4 to 6, ground greyish-white, closely mottled with brown and ashy-grey. Some eggs have a dark cap or zone, others a blackish hair-streak. Average of 100 eggs, 21.3×15.5 mm. *Breeding-season.*—Begins end April, but most eggs are laid in May. Possibly two broods, as fresh eggs have been found in July. *Incubation.*—Period not exactly known; apparently performed by hen.

FOOD.—Chiefly insects during breeding-season (coleoptera, neurop-tera, diptera, and their larvæ), also spiders and plant lice. During autumn and winter small mollusca, vegetable matter (confervæ) and seeds are also taken.

DISTRIBUTION.—*England and Wales.*—Possibly regular migrant to Sussex coast and a vagrant elsewhere. There has been some confusion between the Water-Pipit and Scandinavian Rock-Pipit, but Mr. M. J. Nicoll has shown (*Zool.*, 1906, p. 467) that it is fairly regular on passage in Sussex. The following appear satisfactory: Sussex, four, spring and autumn prior to 1900, one Feb., 1900, one Oct., 1902, four Oct., eight Nov., and one Dec., 1904, four Feb., one April, and one Oct., 1905, some spring, 1906, one Sept., 1910. Single birds, Isle of Wight, Sept., 1865; Lincs., April, 1895; Carnarvon, April and Dec., 1897, Feb., 1898; Scilly Islands, May, 1903; Oxon, Mar., 1903; Devon, Aug., 1904; Norfolk, Jan., 1905; Kent, Jan., 1905 (*cf. Brit. B.*, I, pp. 113-114, II, p. 276, III, pp. 120, 299). *Ireland.*—One Rockabill (Dublin), June, 1861.

DISTRIBUTION.—*Abroad.*—Mountains of central and south Europe generally, south to Spain and Corsica, east to Asia Minor. Partly migrant, or vagrant, visiting plains of north Germany and elsewhere, and common in winter in south Europe, also casual in north-west Africa.

74. *Anthus spinoletta rubescens* (Tunst.)—THE AMERICAN WATER-PIPIT.

ALAUDA RUBESCENS Tunstall, Orn. Brit., p. 2 (1771—Ex Pennant, Brit. Zool., Birds, II, p. 239, who took his descr. from Edwards, Gleanings, pl. 297, where a bird from Pennsylvania is figured; Edwards said he also found this bird near London.)

Anthus ludovicianus Yarrell, I, p. 589 (in text); *A. pennsylvanicus* = *ludovicianus*, Saunders, p. 142 (in text).

DESCRIPTION.—*Adult male and female.* *Winter.*—Upper-parts much as *A. s. petrosus* (see p. 188), but rather browner, not so olivaceous (intermediate in colour between warm brown of *A. s. spinoletta* and olive-brown of *A. s. petrosus*); under-parts

deep buff or pale buff, never white as in *A. s. spinoletta* or olivaceous as in *A. s. petrosus*; streaks of breast and flanks narrower and blacker, not so brown as in *A. s. spinoletta* and not so olivaceous as in *A. s. petrosus*; axillaries whitish as in *A. s. spinoletta*; wings and tail like *A. s. spinoletta* with light portions of outer tail-feathers white. This plumage is acquired by complete moult in July-Sept. *Summer*.—The body-plumage, lesser and median wing-coverts, and usually inner greater coverts, some innermost secondaries and central tail-feathers are moulted Feb.-April, but not rest of wings and tail; upper-parts become brown tinged grey, the edges of the feathers of crown and mantle being somewhat ashy-grey, much as in *A. s. littoralis*, but usually with a more ashy tinge; paler, more grey and less warm brown, on mantle than *A. s. spinoletta*; eye-stripe and under-parts varying from buffish-pink scarcely streaked to pinkish-buff with almost as many streaks as in winter; belly and under tail-coverts more buff, not so white as in *A. s. spinoletta*. N.B.—Much worn specimens have very little buff tinge on under-parts.

Nesting and Juvenile.—(Not examined.)

First winter and summer.—Like adults.

Measurements and structure.—♂ wing 82-89 mm., tail 62-69, tarsus 22-23, bill from skull 12-14 (12 measured). ♀ wing 78-82. Structure as in *A. s. petrosus*.

BREEDING-HABITS.—Breeds in depression of ground, or in cavity sheltered by rocks, sometimes deep down in crevice. *Nest*.—Loosely built of dead grasses. *Eggs*.—Usually 4 or 5; resembling those of Rock-Pipit, varying considerably and ranging from pinkish to greenish or brownish in general tone, but all closely freckled with fine spots. Average of 44 eggs, 19.5×14.58 mm. *Breeding-season*.—Second half of June. *Incubation*.—Period unknown: probably by hen.

FOOD.—Insects, small seeds, small mollusca and crustacea.

DISTRIBUTION.—*Scotland*.—Young male St. Kilda (O. Hebrides), Sept. 30th, 1910 (W. Eagle Clarke, *Ann. S.N.H.*, 1911, p. 52 and *Studies in Bird Migration*, II, p. 212; cf. *Brit. B.*, IV, p. 285). The specimen mentioned by Edwards (*ut supra*), and those recorded by MacGillivray (*Man. Brit. Birds*, p. 169), were probably *A. s. littoralis* (cf. Yarrell, I, p. 590).

DISTRIBUTION.—*Abroad*.—Breeds in Arctic zone from north-east Siberia, north Alaska, north Mackenzie, on both sides of Davis Strait south to Great Slave Lake, north Quebec and Newfoundland, and from Aleutian Islands and Prince William Sound, as well as on high mountains south to California and mid-Mexico. Winters from south United States to Guatemala, also on Bermuda. Has occurred twice on Heligoland.

75. *Anthus spinoletta petrosus* (Mont.) *—THE ROCK-PIPIT.

ALAUDA PETROSA Montagu, Trans. Linn. Soc. London, iv, p. 41 (1798—Wales).

Alauda obscura—Non *A. obscura* Gmelin 1789—Latham, Index Orn., II, p. 494 (1790—England).

Anthus obscurus (Latham), Yarrell, I, p. 586; Saunders, p. 143.

Anthus spinoletta obscurus (Lath.), Hand-List B.B., p. 36 (1912).

DESCRIPTION.—*Adult male and female.* *Winter.*—All upper-parts dark olive-brown, rump uniform but feathers of rest of upper-parts with darker and browner centres; orbital ring and narrow, somewhat indistinct, line from nostrils over and behind eye, creamy-white; lores and under eye blackish, finely speckled creamy-white; ear-coverts olive-brown; chin, centre of throat and belly olive-buff or olive-white; under tail-coverts same but longer ones streaked olive-brown; rest of under-parts thickly streaked dark olive-brown (the dark parts of the feathers being blended into the pale parts the streaks are not harshly contrasted); axillaries smoke-brown fringed white or yellowish-white; tail brown-black fringed olivaceous on outer webs, central pair browner, outer pair pale smoke-brown on outer web and with a smoky-white wedge-shaped mark on distal half of inner web, next (penultimate) pair with a smoky-white mark at tip; wing-feathers brown-black narrowly edged olivaceous on outer and more broadly smoky-white on inner webs, inner secondaries broadly edged olive-brown; primary-coverts like primaries; rest of wing-coverts like inner secondaries but with rather paler tips. This plumage is acquired by complete moult in Aug.-Oct. In mid-winter when somewhat worn upper-parts become browner (less olive) and under-parts paler with the streaks browner and more distinct. *Summer.*—The body-plumage is moulted in Feb.-April, occasionally lesser and median wing-coverts, or some innermost secondaries and rarely whole tail, but not usually any tail-feathers and not rest of wing-feathers, primary-coverts or greater wing-coverts. New feathers like winter but very slightly less olive on upper-parts and usually slightly less olive-buff and more whitish on under-parts, and the streaks rather browner and less olive. When worn, dark centres of feathers of upper-parts become more distinct and fringes are greyer, under-parts paler. N.B.—Rarely there is a slight pinkish-buff tinge on throat and such specimens are very difficult to distinguish from some specimens of *A. s. littoralis*, but crown of latter is usually slightly greyer.

Nestling.—Down, brown-grey, long and fairly plentiful; distribution, inner and outer supra-orbital, occipital, spinal, humeral, ulnar, femoral, crural and ventral (short on last). Mouth, inside reddish-flesh, no spots, externally gape-flanges very pale yellow.

Juvenile (Plate 6).—Like adult but upper-parts slightly browner

* We are obliged to Mr. T. Iredale for pointing out the prior use of *A. obscura* in 1789.—ED.

and less olivaceous, chin and throat speckled blackish, sides of throat rather darker than adult, and streaks of breast rather darker and narrower.

First winter.—Like adult, but often more yellowish on under-parts, but this is not always so. The juvenile body-plumage, lesser wing-coverts and usually median and some greater wing-coverts and some innermost secondaries are moulted in Aug.-Sept., but not rest of wings or tail. *First summer*.—Like adult and moult apparently the same.

Measurements and structure.—♂ wing 89-94 mm., tail 63-68, tarsus 23-24, bill from skull 14-16 (12 measured). ♀ wing 80-90. Primaries: 1st minute and hidden, 3rd and 4th longest, 2nd and 5th sometimes as long, often 1-2 mm. shorter, 6th 9-12 shorter; 3rd to 5th emarginated outer webs. Secondaries between 7th and 8th primaries, tips square slightly notched, longest inner secondary between 5th and 6th primaries. Tail slightly forked. Bill rather fine with base wider and flatter. A few fine, short rictal bristles. Nostrils uncovered. Hind claw curved and about length of hind toe.

Soft parts.—Bill brown-black, with base of under mandible yellowish-flesh (winter), all brown-black (summer); legs and feet flesh-brown; iris black-brown.

CHARACTERS AND ALLIED FORMS.—The Water-Pipits differ from the Rock-Pipits in having pale portions of outer tail-feathers white instead of smoky-white, for other differences see under *A. s. spinoletta* and *rubescens*, for differences of *A. s. littoralis* see under that form, *A. s. kleinschmidti* (Færoes) has darker upper-parts and more streaked under-parts.

FIELD-CHARACTERS.—Pre-eminently a bird of rocky coasts, but in winter also frequents mud-banks and estuaries. Very like Meadow-Pipit but larger and darker, and white on outer tail-feathers replaced by smoky-grey, a character that distinguishes it from Water-Pipit and all others. Song, call and alarm-notes similar to those of Meadow-Pipit.

BREEDING-HABITS.—Nests in hole or recess of some kind in cliff, often sheltered by vegetation, less often in grassy banks, burrows in soil or thick growth of maritime plants, but always close to the sea-shore, though sometimes at considerable height. *Nest*.—Usually built of dead grasses and bents, lined finer bents and horse-hair; sometimes sea-wrack and moss utilized. *Eggs*.—4-5, in some cases 6, with greyish-white ground, thickly covered fine olive-brown and ashy-grey spots, sometimes with cap or zone at big end. Erythristic varieties also occur. Average size of 100 eggs, 21.3 × 15.9 mm. *Breeding-season*.—From latter half April to early May, and again in June. Two broods. *Incubation*.—About a fortnight; probably by hen only. *Fledging-period*.—15 days.

FOOD.—Insects, animal and vegetable matter picked up on shore. Insects taken include coleoptera, diptera and larvæ, and aphides. Small worms, crustacea (sandhoppers), slugs, small marine mollusca, remains of small fish, and seeds also recorded.

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed on rocky shores throughout. Also on many flat shores in autumn and winter.

MIGRATIONS.—*British Isles.*—Autumn immigration east coast Great Britain, and return-migration spring. There is evidence that some migrants pass on southward. No regular migration noted elsewhere.

DISTRIBUTION.—*Abroad.*—Channel Islands, and coasts of north France. According to Collett (*Nyt Mag. Naturv.*, XXIII, p. 144, XXVI, p. 306) this form breeds on coasts of Norway, while *A. spinoletta littoralis* is the Baltic form. In winter vagrant, and found along the coasts to Spain, also occasionally inland.

76. *Anthus spinoletta littoralis* Brehm*—THE SCANDINAVIAN ROCK-PIFIT.

ANTHUS LITTORALIS Brehm, Handb. Naturg. Vög. Deutschl., p. 331 (1831—Danish Isles).

Anthus rupestris, Yarrell, I, p. 588 (in text); Saunders, p. 143 (in text).

DESCRIPTION.—*Adult male and female.* *Winter.*—Apparently exactly like *A. s. petrosus* (see p. 188). *Summer.*—Moult as *A. s. petrosus*. New feathers of upper-parts are rather greener with more slatish edges and not so brown as *A. s. petrosus*; chin more whitish than in *A. s. petrosus*; throat and upper-breast with varying amount of buffish-pink; sometimes the pink is very marked and extends all over throat and breast and in such examples the streaks of breast are usually absent, in other examples the pink is reduced to a tinge on a few feathers of lower throat and there is every variation between these extremes.

Measurements and structure.—As in *A. s. petrosus*.

BREEDING-HABITS.—Similar to those of British race. *Nest.*—Sometimes reindeer hair in lining. *Eggs.*—Average size of 19, 21.5 × 15.4 mm. *Breeding-season.*—From mid-May onward in Norway, in June in high north, where only one brood probably reared.

FOOD.—Similar to that of the British race.

DISTRIBUTION.—*British Isles.*—Since Booth noted its occurrence in Sussex in March and April very little recorded. Has been observed in parts of Wales, Scilly Isles, Northumberland, Lincs.,

* The name *rupestris* refers only in part to this bird.—E.H.

Norfolk, Land's End, Kent (two), Fair Isle (two), Pentland Skerries (Orkneys). Said to pass along Yorks. coast in *autumn*, which is probable, but the bird is only distinguishable from the Rock-Pipit in summer-plumage, when the throat is less spotted and has a rosy hue. Specimens recorded by Edwards near London and by MacGillivray near Edinburgh as "*Alauda rubescens*" (*vide supra*) were possibly of this race.

DISTRIBUTION.—*Abroad*.—Coasts of Scandinavia (Baltic coasts only according to Collett), Danish Isles and, it is said, White Sea in north Russia. In winter farther south: Heligoland (common), coasts of Germany, Holland, Belgium, north France.

Genus MOTACILLA L.

MOTACILLA Linnæus, Syst. Nat., ed. x, i, p. 184 (1758—Mixture of many soft-billed *Oscines*, type by subsequent designation—Gray 1840—*M. alba* L.).

Contains the black and white, grey and yellow Wagtails. Tail longer than in Pipits, as long as or longer than wing, slightly rounded at tip, rectrices as a rule rather narrow. No species striped or spotted. Sexes different, young different from both. Eggs spotted. Old world, except Australia, where only irregular and rare straggler, and Polynesia, in south parts of Asia only wintering, in Africa various species, south to Cape Colony. Most numerous in Palæarctic region.

Key to adult males in summer of genus MOTACILLA.

- | | | | |
|-----|--|---|--------------------------------------|
| 1 { | Under-parts white, without any yellow | 2 | |
| | Under-parts chiefly or entirely yellow | 4 | |
| 2 { | Back grey | 3 | |
| | Back black | | <i>M. a. lugubris</i> , p. 206 |
| 3 { | Ear-coverts white | | <i>M. a. alba</i> , p. 209 |
| | Ear-coverts black | | <i>M. a. personata</i> , p. 212 |
| 4 { | Tail longer than wing, outer tail-feather entirely white | | <i>M. c. cinerea</i> , p. 202 |
| | Tail not longer than wing, outer tail-feather not entirely white | 5 | |
| 5 { | Throat white | | <i>M. f. cinereocapilla</i> , p. 197 |
| | Throat yellow | 6 | |
| | Crown greenish, eye-stripe yellow | | <i>M. f. rayi</i> , p. 199 |
| | Crown ash-grey, eye-stripe white | | <i>M. f. flava</i> , p. 192 |
| 6 { | Crown very light grey, eye-stripe white | | <i>M. f. beema</i> , p. 196 |
| | Crown dark grey or slate, eye-stripe generally absent or ill-defined | | <i>M. f. thunbergi</i> , p. 196 |
| | Crown black, eye-stripe nearly always absent | | <i>M. f. feldegg</i> , p. 198 |

Key to adult males in winter of genus MOTACILLA.

- | | | | |
|-----|---|---|---|
| 1 { | Under-parts without any yellow | 2 | |
| | Under-parts with some yellow | 4 | |
| 2 { | Back ashy-grey | 3 | |
| | Back darker, more slate-grey mixed with black | | <i>M. a. lugubris</i> , p. 206 |
| 3 { | Ear-coverts white | | <i>M. a. alba</i> , p. 209 |
| | Ear-coverts black | | <i>M. a. personata</i> , p. 212 |
| 4 { | Tail longer than wing, outer tail-feather entirely white | | <i>M. c. cinerea</i> , p. 202 |
| | Tail not longer than wing, outer tail-feather not entirely white | 5 | |
| | Crown black with green and greyish-brown edges, ear-coverts black and greenish-brown, eye-stripe absent | | <i>M. f. feldegg</i> , p. 198 |
| | Crown greenish-brown, ear-coverts brownish slate-colour, eye-stripe absent or ill-defined, rarely distinct and well-defined | | <i>M. f. thunbergi</i> , p. 196
and <i>M. f. cinereocapilla</i> , p. 197 |
| 5 { | Crown greenish-brown, ear-coverts brown with whitish stripes, eye-stripe yellowish-white | | <i>M. f. flava</i> , p. 192
and <i>M. f. beema</i> , p. 196 |
| | Crown greenish-brown, ear-coverts brown with buff or yellowish markings, eye-stripe buffish-yellow to buff | | <i>M. f. rayi</i> , p. 199 |

MOTACILLA FLAVA**77. Motacilla flava flava L.—THE BLUE-HEADED WAGTAIL.**

MOTACILLA FLAVA Linnaeus, Syst. Nat., ed. x, i, p. 185 (1758—"Habitat in Europa." Restricted typical locality: S. Sweden).

Motacilla flava Linnaeus, Yarrell, i, p. 558; Saunders, p. 127; *M. f. flava* L., N. F. Ticehurst, Brit. B., i, p. 134 et seq.

DESCRIPTION (Plate 7).—*Adult male. Winter.*—Fore-head and fore-part of crown bluish-grey much obscured by greenish-brown tips of feathers; rest of crown, mantle and scapulars greenish-brown (yellowish-green tips and edges of feathers soon wear away and fore-head becomes greyer, crown greyish-brown and mantle browner); rump yellowish-green; upper tail-coverts dark brown tipped and fringed green; line from nostrils over and behind eye and apex of chin white slightly tinged creamy-yellow; lores, line under eye and ear-coverts brown with whitish markings; rest of chin, throat, lower-breast, belly and under tail-coverts bright yellow; upper-breast buffish-yellow, and many of the feathers, especially in centre and at sides, marked dark brown, forming a very ill-defined pectoral band; flanks greenish-yellow; under wing-coverts and axillaries very pale yellow; tail-feathers black-brown, very narrowly fringed greenish to whitish-yellow,



(9-10THS NATURAL SIZE.)

1, Blue-headed Wagtail (*Motacilla f. flava*). 2, Yellow Wagtail (*M. f. rayi*). 3, Grey-headed Wagtail (*M. f. thunbergi*). 4, Sykes's Wagtail (*M. f. beema*). 5, Ashy-headed Wagtail (*M. f. cinereocapilla*). 6, Black-headed Wagtail (*M. f. feldegg*).

[Face p. 192.]

outermost pair mostly white with only inner edge of basal two-thirds of inner web black-brown, next (penultimate) pair sometimes with almost as much white as outer pair but usually with basal quarter of inner web and much of shaft black-brown, as well as a wider margin on inner web; wing-feathers dark brown, edged yellowish- or buffish-white on outer, and greyish-white on inner webs; innermost secondaries, greater and median wing-coverts same but more broadly edged and tipped; lesser coverts with more greenish tips. This plumage is acquired by complete moult in Aug.-Sept. N.B.—In this plumage differs from *M. f. rayi* by its greyer fore-head, whiter superciliary stripe, white on chin, usually brighter yellow of throat, and more distinct dark marks on upper-breast. *Summer*.—All the body-feathers, most lesser and median wing-coverts, many inner greater coverts and usually innermost secondaries and central tail-feathers are moulted Jan. to April, but not primary-coverts nor rest of wing- and tail-feathers. (N.B.—Exceptionally whole tail moults. Extent of moult of wing-coverts and inner secondaries varies individually.) Fore-head, crown, nape, and back of neck uniform blue-grey (often a few green feathers on crown); rest of upper-parts yellowish-green when freshly moulted, becoming browner with wear; line from nostrils, over and behind eye white; lores, under eye and ear-coverts like crown but darker and marked white; chin with varying amount of white sometimes only at angle of mandibles and sometimes extending some way down throat; rest of under-parts bright yellow, flanks greenish and a patch of yellowish-green on each side of upper-breast and usually some feathers of upper-breast marked dark green; new wing-coverts edged and tipped more greenish-yellow than in winter. N.B.—In this plumage at once distinguished from *M. f. rayi* by its blue crown and white eye-stripe.

Adult female. Winter.—Upper-parts resembling adult male; eye-stripe usually more tinged yellow; chin, throat and upper-breast paler and more buffish, often very pale buff only tinged yellow with dark markings rather more prominent; rest of under-parts paler yellow than male. N.B.—In this plumage often difficult to distinguish from *M. f. rayi*, but crown generally greyer not so brown and chin either yellower or more white and less buff. *Summer*.—Moult as male. Top of head more brownish, not so pure a blue-grey as male; mantle rather browner; eye-stripe and chin become whiter and throat and breast yellower than winter, but tinged buff and not so bright as in adult male and spots on upper-breast especially at sides more prominent than in male. N.B.—In this plumage crown is greyer and eye-stripe and chin whiter than in *M. f. rayi*.

Nestling.—Down buff, fairly long and plentiful; distribution, outer and inner supra-orbital, occipital, spinal, humeral and ulnar. Mouth, inside orange, two brown spots at base of tongue; externally gape-flanges pale yellow.

Juvenile.—Whole upper-parts earth-brown with blackish markings, forming dark lines on sides of crown, upper tail-coverts black-brown with very narrow buff tips; eye-stripe extending behind eye and little in front buff; lores and ear-coverts buff and dark brown; chin and centre of throat pale buff; sides of throat from base of lower mandibles to breast and band across breast brown-black; rest of breast buff; belly, under tail-coverts, under wing-coverts and axillaries pale yellowish-buff; tail- and wing-feathers and wing-coverts as adult but with buff to whitish-buff edgings and tips. N.B.—In this plumage apparently indistinguishable from *M. f. rayi*.

First winter. Male.—Crown and mantle brown; back and rump greenish-brown; upper tail-coverts black-brown fringed green; eye-stripe more buffish than adult; lores and ear-coverts as adult; chin and throat buffish-white; upper-breast darker with a broken line of black-brown marks; lower-breast, belly and under tail-coverts pale yellow; fringes of wing-feathers (when not worn off) less yellowish than adults and tips and fringes of wing-coverts paler and more whitish. (Much resembling adult female winter, but upper-parts not so green and throat and breast more buff.) The juvenile body-plumage and most of the wing-coverts (not primary-coverts) are moulted in July-Sept. N.B.—In this plumage usually indistinguishable from *M. f. rayi*, but some specimens of latter have deeper buff eye-stripe and upper-breast than in *M. f. flava*. *Summer*.—Same moult as in adult, but often commencing in November. After moult resembles adult.

First winter. Female.—Closely resembling first winter male, but browner, not so green on back and rump, usually more buff and more prominently spotted on breast, and belly paler yellow. N.B.—In this plumage cannot be distinguished with certainty from *M. f. rayi*. *Summer*.—After moult becomes a little greener on back and rump, and rather deeper yellow on belly, thus resembling first winter male and differing from adult summer female by its whitish-buff throat and upper-breast and much browner upper-parts. N.B.—In this plumage cannot be distinguished with certainty from *M. f. rayi*, but eye-stripe and chin are usually whiter.

Measurements and structure.—♂ wing 80-84 mm., tail 69-76, tarsus 22-24, bill from skull 13-15 (12 measured). ♀ wing 76-82. Primaries: 1st minute, about one-third primary-coverts, 2nd longest, 3rd and 4th sometimes equal, sometimes 1-3 mm. shorter, 5th 3-7 shorter, 6th 10-14 shorter; 3rd and 4th clearly, and 5th indistinctly emarginated outer webs. Secondaries between 7th and 10th primaries, tips square very slightly notched, longest secondary between 4th and 5th or as long as (in spring often longer than) longest primary. Bill fine, rather flat at base. A few short, fine rictal bristles. Hind claw slightly curved, as long as, or slightly longer than, hind toe.

Soft parts.—Bill greyish-black, paler at base of lower mandible ; legs and feet black ; iris black-brown.

CHARACTERS AND ALLIED FORMS.*—Differences of *M. f. rayi* are given above under description of each plumage. For differences of *M. f. beema*, *thunbergi*, *cinereocapilla*, and *feldegg* see under those forms. Adult male of *C. f. dombrowskii* (Dobrogea, Wallachia), has dark lores and ear-coverts, scarcely any white on chin, darker crown but not so dark as in *C. f. thunbergi*, *M. f. campestris* (south Russia to Transcaspia) is like *M. f. rayi*, but adult male in summer has fore-head and fore-part of crown as yellow as throat, *M. f. melanogriseus* (Turkestan) is like *M. f. feldegg*, but adult male has white chin and white line from lower mandibles under ear-coverts, *M. f. leucocephala* (Dsungaria, southern Altai) adult male has white fore-head, crown, ear-coverts, lores and chin, *M. f. taivanus* (Baikal, Amur to Kurile) adult male has dark green crown, yellow eye-stripe and blackish lores and ear-coverts, *M. f. pygmæa* (Egypt) is small and dark and has white chin, other forms breed in north-eastern Siberia, Kamtschatka and Alaska.

BREEDING-HABITS.—Nests in thick vegetation in low-lying meadows and cultivated ground. *Nest*.—Generally well concealed. Built of bents and roots, sometimes moss in foundation, with thick lining of hair. *Eggs*.—5-6, sometimes 7, so finely speckled with ochreous as to be almost uniform, but sometimes with distinct mottling, and generally a dark hair-streak. Average of 100 eggs, 18.7×13.9 mm. *Breeding-season*.—From end May or early June onward to July, but probably single brooded, as a rule. *Incubation*.—Period not exactly known ; chiefly at any rate by hen.

FOOD.—Almost entirely insects (coleoptera and larvæ, diptera, orthoptera, larvæ of lepidoptera, rhynchota, etc.). Saxby records small worms, larvæ, aquatic insects and small univalves, but these are probably exceptional and diptera constitute bulk of food.

DISTRIBUTION.—*England*.—Summer-resident in small numbers south-east Sussex and south-west Kent, arriving end April and departing August. Has bred several times Durham and Wilts., and possibly north Devon, Norfolk, Suffolk, north Kent, and Essex. Elsewhere often recorded as a straggler, but chiefly in south. *Wales*.—Two Merioneth, several Carnarvon, and has occurred, and possibly bred, Brecon. *Scotland*.—Has occurred at Edinburgh, in Haddington, Lanark, Dumfries, Isle of May, Shetlands, and Fair Isle. Possibly nested Aberdeen.

* Varieties with very deep yellow (almost orange) under-parts are occasionally met with in various subspecies, but no such specimen of *M. f. rayi* has been examined.

DISTRIBUTION.—*Abroad.*—Breeds in most parts of Europe, from middle Scandinavia to Pyrenees, and (in small numbers) north Italy, eastwards throughout Russia (limits in south-east uncertain) and Hungary to Danube and Save. Winters in Africa. Represented in north Europe, Mediterranean countries, south Russia, and various parts of north Asia by a number of other forms.

78. *Motacilla flava beema* (Sykes)—SYKES'S WAGTAIL.

BUDYTES BEEMA Sykes, Proc. Committee Zool. Soc., London, Part II, 1832, p. 90 (1832—Dekkan, India).

Motacilla beema, Butterfield, Zool., 1902, p. 232; Saunders, Brit. B., I, p. 11; N. F. Ticehurst, t.c., I, p. 136.

DESCRIPTION (Plate 7).—*Adult male. Winter.*—Resembling that of *M. f. flava* but crown less brown and more green and grey and ear-coverts rather greyer, not so brown. *Summer.*—Fore-head and crown considerably paler, more ashy blue-grey, and ear-coverts with more white than in *M. f. flava*.

Female.—Cannot be distinguished from that of *M. f. flava*.

Nestling and juvenile.—(Not examined.)

First winter. Male.—Crown apparently very slightly paler and eye-stripe rather whiter than in *M. f. flava*, but most specimens cannot be distinguished.

Measurements and structure.—Like *M. f. flava* but tail usually rather shorter, ♂ 67-71 mm. (12 measured).

BREEDING-HABITS.—Probably similar to other races.

FOOD.—Also probably insects.

DISTRIBUTION.—*England.*—One. Male, Rottingdean (Sussex), April 20, 1898 (*ut supra*). [A male, Sussex, May 31, 1901, said to have been probably of this race, is a worn example of *M. f. flava* (N. F. Ticehurst, Brit. B., I, p. 136.)] *Scotland.*—One. Male, Fair Isle, May 18, 1910 (W. E. Clarke, Scot. Nat., 1913, p. 153).

DISTRIBUTION.—*Abroad.*—West Siberia. Winters in India. Casual in Europe (Hungary, Italy and Tunisia).

79. *Motacilla flava thunbergi* Billberg*—THE GREY-HEADED WAGTAIL.

MOTACILLA THUNBERGI Billberg, Synopsis Fauna Scand., I, 2, Aves, p. 50 (1828—Lapland).

Motacilla viridis Gm.: *M. borealis* Sundev., Saunders, Brit. B., I, p. 10; *M. f. borealis* Sund., N. F. Ticehurst, t.c., I, p. 136.

* Billberg's name antedates Sundevall's *borealis* by 14 years, and has now been widely adopted.—E.H.

DESCRIPTION (Plate 7).—*Adult male. Winter.*—Resembling that of *M. f. flava* but either with no eye-stripe or only a very small one, ear-coverts darker and more slate-colour not so brown, crown and mantle darker and more greenish and less brown, spots on upper-breast and sides of throat usually well marked, white on chin much restricted. *Summer.*—Eye-stripe absent or ill defined, crown darker slate-grey, lores and ear-coverts often nearly black with no white markings, mantle and rump darker.

Adult female. Winter and summer.—Upper-parts and ear-coverts distinctly darker than in *M. f. flava*, and eye-stripe usually less developed.

Nestling.—(Not examined.)

Juvenile.—Like that of *M. f. flava*.

First winter.—(No authentic specimens examined.)

First summer. Female.—Upper-parts and ear-coverts slightly darker than in *M. f. flava*.

Measurements and structure.—Like *M. f. flava*, but some specimens are slightly larger. ♂ wing 79-86 mm., tail 68-78, tarsus 23-26, bill from skull 13-16 (12 measured).

BREEDING-HABITS.—Similar to those of *Motacilla f. flava*, nesting under tussocks in tundra. *Nest.*—Also similar. *Eggs.*—5-6, sometimes 7. Average of 100, 18.3×13.9 mm. *Breeding-season.*—From mid-June onward in Lapland. One brood.

FOOD.—Insects, chiefly diptera (mosquitoes, etc.) in summer.

DISTRIBUTION.—*England.*—One probable, Penzance (Saunders, p. 128). One Yorks., spring, 1901. Possibly a pair bred Romney Marsh, June, 1906. Sussex, two May, 1903, one May, 1904, one May, 1907, one spring, 1869 or 1870, one May, 1909, one April, 1912, one, May, 1917. One possibly Dover (Kent), 1889. One Norfolk, May 1, 1842. *Scotland.*—Pentland Skerries (Orkneys), one May, 1888, and one May, 1889. Fair Isle, "fair numbers" end May and early June and Sept., 1908, spring and autumn, 1909 and 1910, Sept. and Oct., 1912, May and June, 1913. Isle of May, one May, 1913 and one May, 1914. Shetland, one Sept., 1914.

DISTRIBUTION.—*Abroad.*—Breeds in north Scandinavia, Russia, and Siberia; on migration throughout Europe—south to north-west and north-east Africa, and doubtless to tropical Africa, as it passes through Sahara in spring, not rare in India, Burma, and Tenasserim.

80. *Motacilla flava cinereocapilla* Savi—THE ASHY-HEADED WAGTAIL.

MOTACILLA CINEREOCAPILLA Savi, Nuovo Giornale dei Letterati, no. 57, p. 190 (1831—Italy).

Motacilla flava cinereocapilla Savi, N. F. Ticehurst Brit. B., 1, p. 137.

DESCRIPTION (Plate 7).—*Adult male. Winter.*—Resembling that of *M. f. flava* but with darker lores and ear-coverts and ill-defined eye-stripe: in these particulars resembling *M. f. thunbergi* but with white of chin extending on to throat more even than in *M. f. flava*. *Summer.*—Same differences as in winter, but more marked, and crown slightly darker than in *M. f. flava*, but not so dark as in *M. f. thunbergi*.

Adult female. Winter and summer.—Very similar to *M. f. flava* and scarcely distinguishable but ear-coverts rather darker and chin purer white.

Nestling and juvenile.—(Not examined.)

First winter. Male and female.—Not to be distinguished from *M. f. flava*.

Measurements and structure.—Like *M. f. flava* but inclined to be smaller. ♂ wing 76-84 mm., tail 68-72, tarsus 21-25, bill from skull 13-14 (12 measured).

BREEDING-HABITS.—Nests in more open sites than *Motacilla f. flava* and *M. f. rayi*, owing to lack of cover, but otherwise habits similar. *Eggs.*—4 to 6, rarely 7; average size of 35, 18.5 × 14 mm. *Breeding-season.*—From latter part April in Spain. Possibly two broods, as eggs taken in Algeria in June.

FOOD.—Insects.

DISTRIBUTION.—*England.*—One Penzance (Cornwall (*ut supra*)). [The 1842 Norfolk specimen is *M. f. thunbergi*, see *Brit. B.*, ix, p. 93.]

DISTRIBUTION.—*Abroad.*—Spain, south France (Camargue), Sicily, Italy, east to Dalmatia, Bosnia, Herzegovina, Montenegro and north-west Africa (Algeria), wintering in northern tropical Africa.

81. *Motacilla flava feldegg* Michah.—THE BLACK-HEADED WAGTAIL.

MOTACILLA FELDEGG Michahelles, Isis, 1830, p. 812 (1830—Southern Dalmatia).*

Motacilla melanocephala Lichtenstein, Verz. Doubl. Zool. Mus. Berlin, p. 38 (1823—Nubia).

Motacilla feldeggi of Michahelles, Butterfield, Bull. B.O.C., xiii, p. 69; *M. melanocephala* Licht., Saunders, *Brit. B.*, i, p. 10. *M. f. melanocephala* Licht., N. F. Ticehurst, *t.c.*, i, p. 137; *Handl. B.B.*, p. 38 (1912).

DESCRIPTION (Plate 7).—*Adult male. Winter.*—Resembling that of *M. f. flava* but feathers of fore-head and crown black fringed green and greyish-brown, and ear-coverts black and greenish-

* We are obliged to Mr. T. Iredale for pointing out the prior use of the combination "*Motacilla melanocephala*" by Gmelin. The name to be used is therefore "*feldegg*," but not *feldeggi*, as the author wrote purposely "*feldegg*" and "*neumayer*" several times.—E.H.

brown, usually no eye-stripe and if any it is yellow and broken. *Summer*.—Crown black often extending on to mantle, lores and ear-coverts black, chin yellow usually without white, edgings and tips of wing-coverts brighter yellow than in *M. f. flava*, dark patches on sides of breast darker and sometimes black.

Adult female. Winter.—Fore-head, crown and ear-coverts mixture of black and brownish-grey, eye-stripe, if any, yellow. *Summer*.—Crown and ear-coverts with more black than in winter, tips and edgings of wing-coverts yellower than in *M. f. flava*, eye-stripe, if any, yellow.

Nestling and juvenile.—(Not examined.)

First winter male and first summer female.—Very similar to *M. f. flava* but always some black or blackish feathers on fore-head and sometimes on crown but ear-coverts brown and eye-stripe white.

First winter. Female.—Apparently indistinguishable from *M. f. flava*.

Measurements and structure.—Larger but otherwise like *M. f. flava*. ♂ wing 79-88 mm., tail 70-80, tarsus 23-26, bill from skull 14-17 (12 measured).

BREEDING-HABITS.—Nests sometimes in cornfields and sometimes in open plain or marsh, sheltered by small bush. *Eggs*.—4 to 6. Average size of 18, 18.68 × 14.4 mm. *Breeding-season*.—From end April or early May to June in south-east Europe; probably double-brooded.

FOOD.—Insect larvæ, coleoptera, and small diptera (Lynes).

DISTRIBUTION.—*England*.—Four. Male, Willingdon (Sussex), May 13, 1903 (W. R. Butterfield, *Zool.*, 1903, p. 420). Male, Lydd (Kent), June 3, 1908 (J. B. Nichols, *Brit. B.*, II, p. 165). Male, Winchelsea (Sussex), May 23, 1909 (*id.*, *op. c.*, III, p. 256). Male, Romney Marsh (Sussex), May 26, 1909 (C. B. Ticehurst, *l.c.*, p. 257). One (probable) seen Norfolk, June 17 and 19, 1910 (*op. c.*, IV, p. 92).

DISTRIBUTION.—*Abroad*.—Breeds in Greece, Turkey, north to Bulgaria and south Dalmatia, Asia Minor, Caucasus, south Russia. Migrates south to Arabia and north-east Africa, straying occasionally northwards (Heligoland) and westwards to France, Italy, Tunisia, and Algeria.

82. *Motacilla flava rayi* (Bp.)—THE YELLOW WAGTAIL.

BUDYTES RAYI Bonaparte, Geog. and Comp. List of B. Europe and N. America, p. 18 (1838—"British Islands").

Budytes neglectus Brehm, Vogelfang, p. 142 (1855—England, rarely in Germany).

Motacilla rayi (Bonaparte), Yarrell, I, p. 564; Saunders, p. 129; *M. flava rayi* (Bp.), Hartert, *Brit. B.*, I, p. 212.

DESCRIPTION (Plate 7).—*Adult male. Winter.*—Fore-head, crown, mantle and scapulars greenish-brown; rump yellowish-green; upper tail-coverts black-brown, tipped and fringed yellowish-green; line from nostrils over and behind eye buffish-yellow to buff; lores, line under eye and ear-coverts brown with buff or yellowish markings; chin and throat greenish-yellow to yellowish-buff; upper-breast yellowish-buff sometimes with a few brown marks in centre; rest of breast, belly and under tail-coverts yellow; sides of breast and flanks darker, more greenish; under wing-coverts and axillaries very pale yellow; tail-feathers very narrowly fringed greenish-yellow, outermost pair mostly white with only inner edge of basal two-thirds of inner web black-brown, next (penultimate) pair sometimes with almost as much white as outer pair but usually with basal quarter of inner web and much of shaft black-brown as well as a wider margin on inner web; wing-feathers dark brown, edged yellowish- or buffish-white on outer, and greyish-white on inner webs; innermost secondaries, greater and median wing-coverts same but more broadly edged and tipped; lesser coverts with more greenish tips. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—The body-feathers, most lesser and median wing-coverts, many inner greater coverts, usually innermost secondaries and sometimes central tail-feathers are moulted in Jan.-March, but not primary-coverts or rest of wing- and tail-feathers (extent of moult in wing-coverts and secondaries varies individually). Fore-head and fore-part of crown greenish-yellow to yellowish-green; back of crown, mantle and scapulars darker yellowish-green; rump rather brighter green; line from nostrils over and behind eye bright yellow; lores and ear-coverts green marked varying amount of yellow; chin and rest of under-parts bright yellow, flanks greenish and a patch of yellowish-green on each side of upper-breast and often some feathers in centre of upper-breast and at sides of throat marked dark green; new wing-coverts edged and tipped more yellow than in winter.

Adult female. Winter.—Much resembling adult male but crown and mantle slightly browner and less green, eye-stripe, chin and throat whitish-buff (sometimes almost white), upper-breast more buff than male, belly usually rather paler. *Summer.*—Moult as male. Fore-head and crown browner green not so yellow as male, mantle darker and browner, eye-stripe and under-parts considerably paler yellow and dark markings on upper-breast rather more prominent than in male.

Nestling.—Down buffish-white; distribution, outer and inner supra-orbital, occipital, spinal, humeral and ulnar. Mouth inside orange-yellow, externally gape-flanges pale yellow.

Juvenile (Plate 7).—Whole upper-parts earth- to yellowish-brown with blackish markings forming dark lines on sides of crown; upper tail-coverts black-brown with narrow buff-tips;

eye-stripe extending behind eye and little in front buff; lores and ear-coverts buff and dark brown; chin and centre of throat pale buff; sides of throat from base of lower mandible to breast and band across breast brown-black; rest of breast buff; belly, under tail-coverts, under wing-coverts and axillaries pale yellowish-buff; tail- and wing-feathers and wing-coverts as adult but with buff to whitish-buff edgings and tips. Females are paler than males and in both sexes as the plumage becomes worn the upper-parts become greyer-brown and under-parts more whitish.

First winter. Male.—Crown brown; mantle same, sometimes tinged green but always browner than adult; rump duller green than adult; eye-stripe, chin and throat paler buffish-white without yellow; breast buff tinged yellow; rest of under-parts much paler yellow than adult; fringes and tips of wing-feathers and wing-coverts paler and not so yellowish. (Much resembles adult female winter but mantle still browner and belly paler.) The juvenile body-plumage and most of the wing-coverts (not primary-coverts) are moulted in July-Sept. *Summer.*—Same moult as in adult but beginning earlier, usually in December or January. After moult resembles adult.

First winter. Female.—Very closely resembling first winter male but usually slightly less green on rump, and belly even paler yellow, under tail-coverts sometimes white. *Summer.*—After moult becomes a little greener on rump and rather deeper yellow on belly and is like first winter male and adult winter female, and differs from adult summer female in being less yellow on eye-stripe, chin and throat, and less green on upper-parts.

Measurements and structure.—Like *M. f. flava*.

Soft parts.—Bill greyish-black, paler at base of lower mandible; legs and feet black; iris black-brown.

CHARACTERS AND ALLIED FORMS.—Differences of *M. f. flava* are given at end of description of each plumage of *M. f. flava* (pp. 193-4), and for differences of other allied forms see p. 195.

FIELD-CHARACTERS.—Adults in breeding dress differ from other sub-species of *M. flava* in yellow superciliary stripe, but young birds and adults after autumn moult can hardly be discriminated in the field from their near allies. A bird of cultivated fields and cattle pastures rather than water-side. Bounding flight like that of other Wagtails. Call-note a shrill "chit-up." A warbling song, not often heard. Very demonstrative if nest is approached, fluttering overhead or perching in adjacent trees with incessant alarm notes.

BREEDING-HABITS.—Generally nests in thick herbage in low-lying meadows, sometimes also in cornfields or garden crops. *Nest.*—In depression, built bents and roots, thickly lined with pad of cow- or horse-hair, and occasional feather or two. *Eggs.*—Usually 6, sometimes 5 or 7, and 8 once recorded. Similar to other Yellow Wagtails, but whitish and olive-grey varieties have been recorded.

Average of 100 eggs, 19×14.1 mm. *Breeding-season*.—Exceptionally eggs laid end April, generally latter part May or early June. One brood generally but apparently a few pairs rear two, as fresh eggs have been found in July. *Incubation*.—Chiefly at any rate by hen; period about fortnight, but not exactly known.

FOOD.—Insects, especially diptera, and small molluscs. One killed on coast contained sandhoppers.

DISTRIBUTION.—*Great Britain*.—Summer-resident. Arrives end March, April, and early May; departs Sept. Has occurred Oct. and even so late as Nov. 27. Distributed throughout England and Wales, but rarely breeds Devon, where, as Cornwall and west Wales, chiefly known as passage-migrant. In Scotland chiefly in Clyde area, elsewhere in south scarce and rarely as far as Inverness and Aberdeen on east side, and not beyond Clyde area in west, north of which a straggler. Said to have bred Orkneys. Occurred N. Rona (O. Hebrides), Orkneys, Shetlands, and Fair Isle. *Ireland*.—Very local, breeding on Loughs Neagh, Corrib, and Mask; occurs autumn Dublin coast and three times Wexford Lights.

DISTRIBUTION.—*Abroad*.—Appears to breed in small numbers in west Holland (Snouckaert van Schauburg, *Avifauna Neerlandica*, p. 27, 1908), west France, and perhaps Portugal, also, it is said, on Heligoland (Weigold, *Orn. Monatsber.*, 1910, p. 158). Migrates through west Europe to west Africa.

MOTACILLA CINEREA

83. *Motacilla cinerea cinerea* Tunst.*—THE GREY WAGTAIL.

MOTACILLA CINEREA Tunstall, *Orn. Brit.*, p. 2 (1771—New name for the "Grey Water Wagtail" and "Hoche-queue ou Bergeronette jaune" of the *Zool. Brit. and Brisson*).

Motacilla boarula Linnæus, *Mantissa Plantarum*, p. 527 (1771—Sweden). *Motacilla grisea* P. L. S. Müller, *Natursystem*, Suppl., p. 175 (1776—Ex Edwards! Müller says "America," but Edwards, who also figured the adult male quite well, expressly says that the bird he described was shot near London).

* Mr. T. Iredale points out to us that the earliest reference to *Motacilla boarula* is Scopoli, *Annus I, Hist. Nat.*, p. 154, 1769. It is clear, however, that Scopoli described (p. 153) the "Grey Wagtail" as *Motacilla flava*, and named the "Blue-headed Wagtail" *Motacilla boarula*. He says that his *M. flava* is not gregarious, non-migratory, and found along rivers, and that it has a grey back and yellow rump. Of his *M. boarula* he says only that it is smaller than his *flava*, gregarious, and not aquatic, follows the herds in the meadows, and has a different note; his quotations refer with more or less certainty to *M. flava flava* or some of its races.

Under the circumstances, Linnæus's later name of 1771 (Scopoli is 1769) cannot be accepted, and we must revert to the name *cinerea* of Tunstall.

Motacilla sulphurea Bechstein, Yarrell, I, p. 552; *Motacilla melanope* (non Pallas), Saunders, p. 125.

Motacilla boarula boarula L., Hand-List B.B., p. 39 (1912).

DESCRIPTION.—*Adult male. Winter.*—Crown, mantle, scapulars and back slate-grey tinged olive; rump and upper tail-coverts yellow-green; lores blackish; narrow stripe from bill over and behind eye pale buff to white; ear-coverts as crown; chin and throat pale buff to white (usually buffish-white); breast buffish-yellow; belly and under tail-coverts brighter yellow; flanks pale grey; axillaries pale grey and white; tail-feathers, three central pairs black with outer webs fringed yellow-green, broadly at base, narrowly at tip, three outer pairs mostly white, the outermost quite white and the other two pairs with inner web and tip white and rest of outer web black fringed yellow-green (the penultimate pair occasionally has very little black on outer web, the third pair from outside often has a trace of black edging near base of inner web, and third pair from centre is rarely mottled with white); primaries black, basal portion of inner web whitish on 5th and white on 6th to 10th; secondaries same but white at base of both webs and more extensive, showing slightly beyond greater coverts, innermost secondaries fringed on outer webs yellowish-white to white; greater and median wing-coverts narrowly edged and tipped olivaceous-grey; lesser coverts olivaceous-grey. This plumage is acquired by complete moult in July-Sept. *Summer.*—All the body-feathers, usually innermost secondaries and middle pair of tail-feathers are moulted in Feb.-March, but not usually rest of wings and tail, though rarely whole tail and a good many inner wing-coverts are moulted. New plumage as in winter, with following exceptions: eye-stripe white; ear-coverts purer grey mottled white; broad malar stripes white; chin and throat black, feathers tipped white (white tips mostly wear off during summer); breast bright yellow like belly.

Adult female. Winter.—Like adult male but slightly more buffish on upper-breast and rather paler yellow on rest of breast and belly. Moult same. *Summer.*—Moult same as male. Like adult male except for chin and throat which are never so black and usually a mixture of white, black and dull yellow (sometimes only a few spots of black in malar region), and rest of throat



The Grey Wagtail (*Motacilla c. cinerea*).

♀ adult, summer.

white, and ear-coverts tinged greenish, not so pure grey. Females without any black on chin and throat are probably first summer birds.

Nestling.—Down, golden-buff; fairly long, but very scanty on outer supra-orbital, occipital and crural tracts; distribution, inner and outer supra-orbital, occipital, humeral, ulnar, spinal, femoral and crural, tuft on uropygium. Mouth inside orange, no spots, externally gape-flanges pale yellow.

Juvenile.—Crown, mantle and scapulars greyish-brown tinged green; rump, upper tail-coverts and fringes at base of tail-feathers like adult but duller and tinged buffish; eye-stripe, chin, throat and upper-breast pale buff with a few greyish-black mottlings on sides of throat; rest of breast and belly very pale yellow; under tail-coverts brighter yellow; fringes and tips of all wing-coverts buff; edgings of inner secondaries pale greyish-green.

First winter. Male.—Like adult male but upper-parts rather more brownish, upper-breast buff and lower-breast very pale yellow and often whitish. Much like adult female but more buff on breast. The juvenile body-feathers, lesser and median wing-coverts, and usually greater wing-coverts, innermost secondaries and central pair of tail-feathers are moulted in July-Sept., but not primary-coverts nor rest of wing- and tail-feathers. *Summer*.—Like adult male and moult same.

First winter. Female.—Not to be distinguished with certainty from first winter male, but upper-breast usually paler buff. *Summer*.—Females with chin and throat white or yellowish-white without any black are probably first summer birds, but this cannot be said with certainty.

Measurements and structure.—♂ wing 81-88 mm., tail 96-103, tarsus 20-22, bill from skull 13-14.5 (12 measured). ♀ wing 80-85, tail 95-103. Primaries: 1st minute and hidden, 2nd to 4th longest (2nd and 4th occasionally 1 mm. shorter than 3rd), 5th 5-6 shorter, 6th 12-15 shorter; 3rd and 4th clearly and 5th less distinctly emarginated outer webs. Secondaries slightly shorter than 10th primary, tips square, longest inner secondary usually as long as or shade longer than longest primary but sometimes shorter than 5th primary. Bill fine, rather flat at base. A few short, fine rictal bristles. Hind claw curved and about as long as hind toe.

Soft parts.—Bill greyish-black, paler at base of lower mandible; legs and feet brownish-flesh; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*M. c. melanope* (Caucasus, Siberia to Kamtschatka) has shorter tail (84-90 mm.), *M. c. schmitzi* (Madeira, Azores) has darker slate-grey upper-parts and ear-coverts and ill-defined eye-stripe. Long tail, more white in outer tail-feathers and grey mantle distinguish Grey Wagtail at

all seasons from *M. flava* and subspecies, while in summer black chin and throat and in winter contrast of buff upper-breast and bright yellow under tail-coverts are distinctive.

FIELD-CHARACTERS.—Differs from all other British Wagtails in its long tail and blue-grey colour of upper-parts. In flight, long tail and sulphur-yellow belly and under tail-coverts are conspicuous. Characteristic of mountain streams in breeding-season. From September to March affects more sluggish lowland streams, ponds, watercress beds, etc., but never seen away from water. Call-note, uttered usually on the wing, is "tzit-zee" generally repeated several times. Alarm-note at nest a plaintive "see-eet." Song a babbling Swallow-like twitter.

BREEDING-HABITS.—Nests in hole of cliff, rocky ledge or cavity in wall, occasionally on steep bank or among tree-roots, and generally quite close to running water, but sometimes some distance away. *Nest.*—Built of moss, small twigs, leaves, roots, and grasses, lined hair (preferably white horsehair), and an occasional feather. *Eggs.*—Generally 4 to 6, sometimes only 3; buff or stone-colour, faintly marbled with greyish-brown and often a dark hair-streak. Occasionally the type approaches that of the Pied Wagtail, though most eggs resemble those of Yellow Wagtail, but are broader oval and paler. Erythristic varieties are rare. Average of 100, eggs 18.8×14.27 mm. *Breeding-season.*—Generally in latter half April or beginning of May; occasionally beginning of April. In some districts a second brood in early June, but in many districts single-brooded. *Incubation.*—Performed by hen only as a rule, but male occasionally found incubating. Period about 14 days.

FOOD.—Mainly insects, especially diptera, but coleoptera also recorded. Small mollusca recorded by Saxby and Norgate.

DISTRIBUTION.—*British Isles.*—Resident. Breeds very sparingly in eastern counties south of Trent and only locally in southern counties east of Devon, most common in Wales, Ireland, and Scotland, but scarcer in north Scotland, breeds Orkneys, but only a visitor to Shetlands and O. Hebrides. A movement from its breeding-places southwards occurs in autumn.

DISTRIBUTION.—*Abroad.*—Europe from south Sweden to Mediterranean countries, east to Ural. Partial migrant, apparently only in small numbers south in winter to Senegambia and British East Africa. Replaced by a closely allied form (*M. c. melanope*) in north Asia (in winter in tropics), and by another on Atlantic isles. (With regard to the form from the Canary Islands, see Hartert, *Vög. pal. Fauna*, I, p. 299.)

MOTACILLA ALBA

84. *Motacilla alba lugubris* Temm.—THE PIED WAGTAIL.

MOTACILLA LUGUBRIS Temminck, Man. d'Orn., I, p. 253 (1820—Partim. Temminck mentions specimens from Russia, Crimea, France, Egypt, Hungary. Restricted typical locality: France).*

Motacilla Yarrellii Gould, B. Europe, List of Plates in Vol. II, p. 2 (1837—Great Britain).

Motacilla lugubris Temminck, Yarrell, I, p. 538; Saunders, p. 121.

M. a. lugubris Temm., Hartert, Brit. B., I, p. 212.

DESCRIPTION (Plate 8).—*Adult male. Winter.*—Fore-head and fore-part of crown white; rest of crown, nape, hind-neck, and rump glossy jet-black; mantle, scapulars and back same, but mixed with varying amount of dark grey; upper tail-coverts same but outer feathers broadly edged white on outer webs; lores, over eyes, ear-coverts, chin, extending down centre of sides of neck, throat, lower-breast, belly and under tail-coverts white; a black crescentic band on upper-breast extending to fore-part of sides of neck but not reaching black of nape; flanks dark grey mixed with black; axillaries white with dark grey centres; tail-feathers glossy jet-black, central pair narrowly fringed white on outer webs, outer pair mostly white with three-quarters of inner web edged black, next (penultimate) pair same but with wider edging of black which reaches shaft at base and with varying amount of black on outer web; primaries black, fringed white, narrowly on outer webs and tips, broadly on inner webs; secondaries same but inner feathers more broadly fringed white on outer webs, innermost feathers browner, not so black; primary-coverts brown-black narrowly fringed and tipped white; greater coverts brown-black broadly fringed and tipped white; median coverts brown-black with long white tips; lesser coverts black, usually mixed with varying amount of grey. This plumage is acquired by complete moult in Aug.-Nov. *Summer.*—The body-feathers and often lesser wing-coverts, some innermost secondaries,

* The diagnosis agrees well with our English bird, which is of course the one occurring in France, and there is no reason to reject the name. Temminck mentions as localities Russia, France, Egypt, Crimea, Hungary. He says that the specimens sent by Pallas from Russia agree perfectly with those killed in France. He also says that the new species interbreeds with the White Wagtail and produces specimens "tapirés" with black and grey. "Tapirés" must be an error for "tapissés." Now, of the localities mentioned by Temminck black-backed Wagtails are only found in France, and not in Russia, Egypt, Crimea or Hungary. What the birds were which looked like the French ones we do not therefore know, but they might possibly have been specimens of *M. a. lugens* from east Siberia; as there is thus only one possible locality in the original description, and as the diagnosis fits the Pied Wagtail entirely, we have to restrict the name *lugubris* to "France," and need not alter this name on the plea that what Temminck described was an undefinable mixture—in fact he only added wrong localities, which was often done by older authors.—E.H.

some inner greater and median wing-coverts and central tail-feathers are moulted in Jan.-March, but not rest of wings or tail. Whole upper-parts black with only a few dark grey feathers here and there; chin and throat black joining black of upper-breast; centre of sides of neck white, and rest of plumage as winter.

Adult female. Winter.—Much like adult male, but usually with more grey on mantle, flanks slightly less dark, wing-feathers and wing-coverts very slightly browner, less black and their tips and edges less pure white. Moults as male. *Summer.*—Moults as male. Like male but mantle with more dark grey and less blackish-brown, black extending rather less far down breast.

Nestling.—Down, smoke-grey. Distribution, inner and outer supra-orbital, occipital, humeral, ulnar, spinal, femoral, crural and ventral (very scanty on two last). Mouth, inside orange-yellow, no spots; externally flanges very pale yellow.

Juvenile. Male and female.—Crown, mantle, scapulars and back grey tinged buffish-brown; fore-head and indefinite line down sides of crown darker, often blackish; rump sooty-brown-black; upper tail-coverts more glossy black, slightly tipped buff; lores, line over eye and ear-coverts dull buffish-white, mottled dark smoke; chin and throat dull white, many feathers tipped sooty-brown-black; crescentic breast-band smoky-brown-black; breast and flanks smoke-grey tinged buffish; belly and under tail-coverts dull white; wing-feathers as adult but more greyish-black and fringes and tips of outer webs ashy-grey tinged buff; primary-coverts as primaries; greater coverts with ashy-grey fringes and dull white tips; median coverts with dull white tips; lesser coverts tipped buffish-grey.

First winter. Male.—Like adult male, but fore-head tinged yellowish and usually mottled with black; ear-coverts and sometimes chin and throat tinged yellowish; back of crown often with some grey feathers amongst black; mantle and scapulars dark grey slightly tinged olivaceous and with very little black (much like adult female but still less black); breast and belly duller white than adult and flanks paler; wing-feathers much browner, not so black as adult, and fringes of outer webs ashy-grey, not white; new innermost secondaries greater and median wing-coverts browner and with duller white edges and tips (unmoulted juvenile feathers still browner and with ashy-grey edges); lesser wing-coverts blackish tipped dark grey. The juvenile body-feathers, lesser wing-coverts, most median and inner greater coverts, some innermost secondaries are moulted in Aug.-Oct., but not rest of wing-feathers or tail. *First summer.*—Moults as in adult, but some innermost secondaries, a good many greater and median wing-coverts and central pair of tail-feathers are more regularly moulted, while rarely whole tail is moulted. New plumage indistinguishable from that of adult female summer, but wing-feathers are much browner and old feathers in wing-coverts

and often one or two innermost secondaries are very worn and brown.

First winter. Female.—Like first winter male and not to be distinguished satisfactorily from it, but crown usually with more grey feathers and often with no black at all on mantle. *Summer.*—Very much like first summer male, but mantle greyer, usually with very little black. Browner wings and wing-coverts distinguish it at both seasons from adult female.

Measurements and structure.—♂ wing 87-93 mm., tail 85-90, tarsus 23-25, bill from skull 13-14 (12 measured). ♀ wing 83-90. Primaries: 1st minute and hidden, 2nd to 4th usually equal and longest, but 4th occasionally 1 mm. shorter, 5th 3-5 shorter, 6th 12-15 shorter; 3rd to 5th emarginated outer webs. Secondaries between 8th and 10th primaries, tips square, longest secondary usually as long as longest primaries but sometimes between 5th and 6th. Bill fine, rather flat at base. A few short, fine rectal bristles. Hind claw curved usually rather shorter than hind toe.

Soft parts.—Bill, legs and feet black; iris brown-black.

CHARACTERS AND ALLIED FORMS.—For differences of *M. a. alba* and *M. a. personata* see under those forms. Distinguished from all other British Wagtails by its black and white plumage.

FIELD-CHARACTERS.—Flight a succession of long curves. Call-note, uttered chiefly in flight, a sharp “chiz-zit.” Alarm note at nest “che-ep.” Song a musical elaboration of call-note. For differences of White Wagtail see under that form.

BREEDING-HABITS.—Breeds in holes of walls, sheds, steep banks, ivy, woodstacks, pollarded willows, thatch of buildings, etc. Less commonly it re-lines old nest of some other bird, generally Thrush's or Blackbird's. *Nest.*—Built of moss, dead leaves, twigs, roots, bents, etc., lined hair, feathers or bits of wool. *Eggs.*—Generally 5 or 6: clutches of 9 to 11, probably by two hens. Ground-colour greyish or bluish-white, spotted or freckled evenly with pale lead-brown and grey. Some varieties are blotched, others pure white or marked with warm brown. Average size of 100 eggs, 20.1×15.1 mm. *Breeding-season.*—From latter part April to early May and again in June. Two broods usually, sometimes three, and fresh eggs recorded in August. *Incubation.*—Lasts 13-14 days; performed chiefly by hen. *Fledging-period.*—13 days (S. E. Brock).

FOOD.—Chiefly diptera, but also coleoptera and smaller lepidoptera and neuroptera, as well as their larvæ. Saxby records fish bones and fragments of shells, and Florence grain, potato, and seeds, but these must be abnormal cases. Young fed chiefly on click beetles (Florence); also flies and caterpillars.

DISTRIBUTION.—*British Isles.*—Resident, generally distributed, but

doubtful breeder Shetlands and only scarce visitor O. Hebrides, where it has been confused with the White Wagtail (*Ann. S.N.H.*, 1902, p. 144). Many of our breeding-birds migrate southwards in autumn and return in early spring; nestlings ringed in England have migrated to France and Portugal.

DISTRIBUTION.—*Abroad.*—Breeds in small numbers on west coast of France, Belgium, and Holland (once), and, according to Collett, near Stavanger and Bergen in Norway. Otherwise represented in Europe, north-west Africa, and northern parts of Asia by other forms. On migration in Heligoland and Denmark, winters in south France, Portugal, Spain, and Morocco.

85. *Motacilla alba alba* L.—THE WHITE WAGTAIL.

MOTACILLA ALBA Linnaeus, *Syst. Nat.*, ed. x, i, p. 185 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Motacilla alba Linnaeus, Yarrell, i, p. 548; Saunders, p. 123.

DESCRIPTION (Plate 8).—*Adult male. Winter.*—Much like first winter male of *M. a. lugubris*, hind portion of crown and nape being black, often with some grey feathers; mantle and scapulars never with black, and grey purer and paler than first winter of *M. a. lugubris*; white of fore-head, sides of head, chin and throat rarely with a tinge of yellow; sides of breast and flanks paler grey than in first winter *M. a. lugubris*, and breast and belly purer white; wing-feathers not brown as in first winter nor so black as in adult male *M. a. lugubris*, more greyish-black; greater and median wing-coverts usually with greyish-white fringes and tips but these are sometimes white, but not so pure white as in adult male *M. a. lugubris*; lesser coverts with tips and fringes longer and paler grey than in first winter *M. a. lugubris*. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—The body-feathers and often some innermost secondaries, some greater and most median wing-coverts and central tail-feathers are moulted in Jan.-March, but not rest of tail or wings. Exactly like winter, but chin and throat entirely black.

Adult female. Winter.—Fore-head grey with sometimes a little dusky-white showing, only bases of feathers being white; crown grey rather darker and more olivaceous than mantle and sometimes with a few blackish feathers, especially on sides of crown; lores, line over eye and ear-coverts white mottled dusky and tinged olivaceous; chin and throat white often tinged olivaceous; rest of plumage like adult male but breast-band not so intense black and belly not so pure white. Differs from first winter *M. a. lugubris* in having less white on fore-head, much more grey and less black on crown, and paler mantle. Moult as adult male. *Summer.*—Moult as adult male. Fore-head becomes white slightly mottled black; crown and nape black, usually with

some grey feathers mixed with black on nape ; throat black ; chin mixture of black and white ; mantle not so pure a grey as in adult male.

Nestling.—(Not examined.)

Juvenile.—Like that of *M. a. lugubris* and difficult to distinguish from it, but usually rather paler on upper-parts and with no black on fore-head.

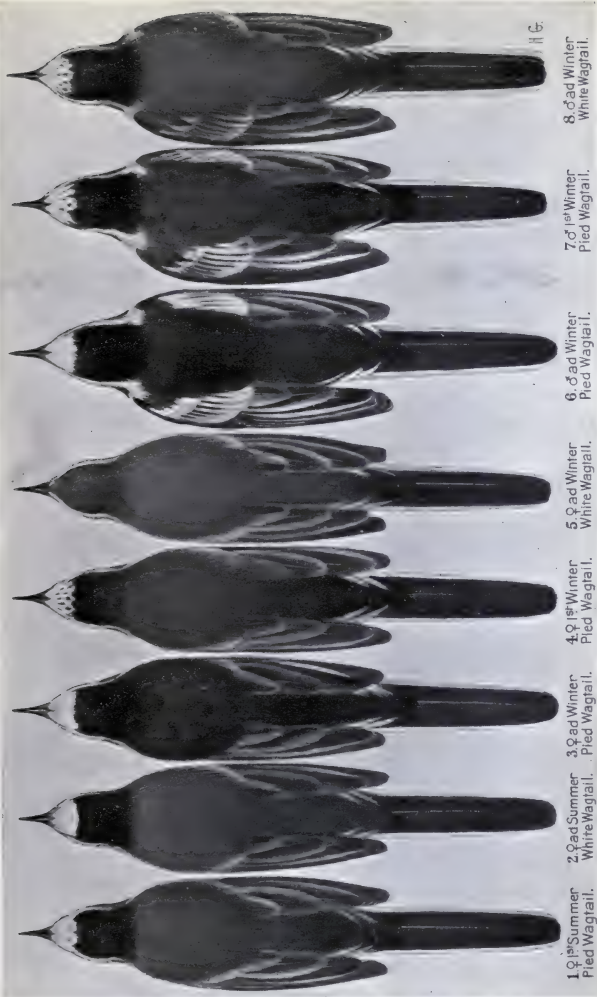
First winter. Male.—Like adult female but usually with rather more black on crown. The juvenile body-feathers, lesser wing-coverts, most median and inner greater coverts and some inner secondaries are moulted in Aug.-Sept., but not rest of wings or tail. *Summer*.—Moult as adult but many greater and median wing-coverts appear to be always moulted, as well as central pair of tail-feathers and occasionally whole tail. Like adult summer male except that wing-feathers are considerably more brown.

First winter. Female.—Like adult female in winter but fore-head very rarely with any white showing, almost always entirely grey washed olivaceous ; crown grey with no black and usually tinged olivaceous. Moult as in first winter male. *Summer*.—Moult as in first summer male. Like adult female summer but fore-head less white and chin with more white and crown sometimes with more grey, wing-feathers brown.

Measurements and structure.—♂ wing 87-96 mm., tail 85-93, tarsus 23.5-26, bill from skull 13-15 (12 measured). ♀ wing 81-89. Averages slightly larger than *M. a. lugubris*. Structure as that form.

Soft parts.—Bill, legs and feet black ; iris brown-black.

CHARACTERS AND ALLIED FORMS.—Distinguished from adult and first summer male and female *M. a. lugubris* by the absence of black on mantle ; but first summer female *lugubris* often has scarcely any black on mantle and is then difficult to distinguish from adult summer female *alba*, which, however, has paler grey mantle and less black on rump ; adult male *alba* very similar to first winter *lugubris* but mantle always paler and purer grey, but some examples are difficult to distinguish even when in hand ; female winter and male first winter *alba* distinguishable from all plumages of *lugubris* by absence, or slight amount, of black on crown and usually grey (not white) fore-head, but mantle, although usually paler than first winter *lugubris*, is sometimes as dull a grey and like those examples of first winter female *lugubris* which have no black in mantle. *M. a. dukhunensis* (west Siberia, Caucasus) resembles *M. a. alba*, but has paler upper-parts and more white on greater and median wing-coverts, *M. a. baicalensis* (middle east Siberia) is similar but has white chin in summer, *M. a. leucopsis* (Manchuria, Mongolia, north-west China, Tibet) has upper-parts much like *M. a. lugubris* but greater and median wing-coverts with much white, and chin white in summer, *M. a. ocularis* (north-



(HALF NATURAL SIZE.)

Pied Wagtails (*Motacilla a. lugubris*) and White Wagtails (*M. a. alba*) in various plumages to show some differences and similarities.

east Siberia) is like *M. a. alba* but has a black streak through lores and behind eyes and more white on wing-coverts, *M. a. lugens* (Kamtschatka and Jesso) is like *ocularis* but has darker lesser wing-coverts, much white on primaries, and has black mantle in summer, *M. a. grandis* (Japan) is similar to last but has black ear-coverts, *M. a. persica* (Persia) is intermediate between *M. a. personata* and *M. a. alba*, *M. a. hodgsoni* (Himalayas) is much like *M. a. personata* but darker on mantle, *M. a. subpersonata* (Marocco) is like *M. a. alba*, but with black line through lores and behind eyes as in *M. a. ocularis*, also black of throat is joined to that of nape by a black band and below this band is a patch of white.

FIELD-CHARACTERS.—Adults in summer much paler on mantle than Pied Wagtail, but at other seasons they closely resemble young and female Pied Wagtail, but females and young males in winter have little or no black on crown and thus can be distinguished from Pied Wagtail. Habits and notes practically same as Pied Wagtail's.

BREEDING-HABITS.—Similar to those of Pied Wagtail, but nests have been recorded in marram grass on sand-dunes, in Sand-Martins' holes, and old Fieldfares' nests, as well as in woodstacks, banks, etc., like its relative. *Nest.*—Also similar. *Eggs.*—From 5 to 7 as a rule, rarely 8; perhaps slightly bluer in a series than Pied Wagtail's, but practically indistinguishable. Erythristic variety once recorded. Average size of 100 eggs, 20.4×15.1 mm. *Breeding-season.*—From end April to early July, exceptionally later in central Europe; in Iceland and north Europe often not before June. Two broods in south; usually one in north. *Incubation.*—By both sexes, but chiefly by hen; period about 12 days. *Fledging-period.*—14 days (in confinement: Teschemaker).

FOOD.—Chiefly diptera, but also coleoptera, lepidoptera, neuroptera and their larvæ.

DISTRIBUTION.—*British Isles.*—Spring and autumn passage migrant. Has bred exceptionally in Devon, Isle of Wight, Kent, Sussex, Middlesex, Cambs., Suffolk, Hunts., Yorks., Westmorland, Carnarvon, Fair Isle (1909 and 1910), Shetland, possibly Northants., Bucks. and Ross. Also often recorded as interbreeding with Pied Wagtail, and although many records are no doubt based upon faulty identification, some are genuine.

Passes through British Isles from mid-March to early June, being chiefly noticed coastal regions west sides Great Britain and Ireland, and especially frequent Welsh coast, in O. Hebrides, Shetlands, Orkneys and Fair Isle. On eastern side appears to pass through in smaller numbers, and seldom recorded south-east coast England, or east coast Ireland, but this is partly due to want of

observation. In autumn returns from mid-Aug. to early Oct. along same routes. Occasionally inland.

DISTRIBUTION.—*Abroad.*—Europe, from Iceland and Scandinavia to Mediterranean, east to Ural—accidental on Jan Mayen, in south Greenland and Ungava, N. America; winters in tropical Africa, touches Azores (exceptionally), Madeira and Canary Islands; is replaced as a breeding-bird in British Isles and parts of north-west France by *M. a. lugubris*, and by other allied forms in north-west Africa and across Asia to Kuriles and Japan.

86. *Motacilla alba personata* Gould.—MASKED WAGTAIL.

MOTACILLA PERSONATA Gould, B. Asia, iv, pl. 63 (1861—India).

Motacilla alba personata Gould, M. J. Nicoll, Bull. B.O.C., xxxix, p. 89.

DESCRIPTION.—*Adult male.*

Winter.—Upper-parts as in *M. a. alba* but mantle and scapulars rather paler grey; black of nape extending round sides of neck and joining black of throat; ear-coverts black; white of fore-head extending in a broad line over and behind eye and under eye; apex of chin white, rest of chin, throat and upper-breast black, feathers with white bases, but feathers of centre of throat often mostly white with black tips; rest of under-parts as *M. a. alba*; tail as *M. a. lugubris*; wing-feathers as in *M. a. alba*; greater wing-coverts with broader and whiter tips and edges than in *M. a. alba*; median coverts mostly white with only their bases grey and sometimes with dark grey shaft-streaks; lesser coverts as in *M. a. alba*. This plumage is acquired by complete moult in Aug.-Nov. *Summer.*—A moult takes place as in *M. a. alba*. After moult black of crown extends further on to upper mantle and some feathers of rest of mantle and scapulars are often marked with black; rump blacker; chin and throat uniform black; greater wing-coverts with whole outer webs white and long white tips, inner webs blackish-grey; median coverts with whole appearing portion white; inner secondaries when renewed with most of outer webs white.

Adult female. *Winter.*—Like adult winter male but with little or no black on crown which is grey usually with some admixture of black; ear-coverts and sides of neck usually less jet-black; centre of throat usually with more white. Moult as in male.



Masked Wagtail (*M. a. personata*).

♂ ad. summer.

Summer.—Moult as in male. Black of nape not extending so far down as in male and no black in mantle, otherwise like adult summer male.

Juvenile.—Upper-parts as in juvenile *M. a. alba*, but with rather more buffish tinge; ear-coverts and sides of neck brownish-grey; broad line behind eye as in adult but cream-coloured instead of white; chin and throat dull grey; feathers of centre of upper-breast marked dull grey but no crescentic band; rest of under-parts dull white, often tinged creamy; greater wing-coverts with broad fringes of white tinged creamy; median coverts white tinged creamy with bases and shaft-streaks brown-grey.

First winter. Male.—Like adult but crown greyer and often with only a little black; chin whiter and throat with more white showing; dark portions of wing-feathers and wing-coverts browner. The juvenile plumage is moulted as in *M. a. alba*. *Summer*.—Moult as in *M. a. alba*. Like adult summer male but wing-feathers browner.

First winter. Female.—White of fore-head restricted and tinged creamy; no black on crown; ear-coverts and sides of neck dark grey; chin and throat with usually more white than in first winter male. *Summer*.—Like adult summer, but with some grey feathers amongst black ones on nape and often some white showing on chin, wing-feathers browner.

Measurements and structure.—♂ wing 89-97 mm., tail 89-99, tarsus 24-26, bill from skull 16-17 (12 measured). ♀ wing 87-94. Bill and tail longer than in *M. a. alba*. Structure as in *M. a. lugubris*.

CHARACTERS.—Distinguished from *M. a. lugubris* and *M. a. alba* in all stages of plumage by white line behind eye and black or dark grey ear-coverts and sides of neck.

BREEDING-HABITS.—*Nest*.—In recesses under stones or in tree-roots in bed of streams much like *M. a. lugubris*. *Eggs*.—4-5, similar to those of other races of *M. alba*. *Breeding-season*.—May and June in Afghanistan.

FOOD.—[No definite information; probably similar to other races.]

DISTRIBUTION.—*England*.—One (adult female) near West St. Leonards (Sussex), April 26th, 1919 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Turkestan from Transcaspia to Altai and Lake Baikal, on Chotan Tagh, in oases of Nija, Keria, and Sampula, south to Afghanistan and Kashmir, north to east Persia. Wintering in India.

[NOTE.—An example of the AMERICAN YELLOW WARBLER, *Dendroica aestiva aestiva* (Gm.), picked up near Axwell Park (Durham), May, 1904 (E. Bidwell, *Bull. B.O.C.*, xv, p. 46), had, in our opinion, most probably escaped from captivity.]

FAMILY CERTHIIDÆ.

Small birds with curved bills, as long as or longer than head. Nostrils near base, protected by membrane, but free of feathers or bristles. Rictal bristles obsolete. Tarsus short, either scutellate or "booted," *i.e.* with an unbroken lamina. Lateral toes very unequal in length, outer toe always decidedly longer than inner, but shorter than middle toe. Claws large, curved, that of hind toe as long as or longer than its digit. Primaries ten; 1st less than half 2nd, 3rd and 4th or 4th and 5th longest. Tail-feathers twelve. Five genera in Europe and Asia to Australia, Africa and North America.

Key to genera of family CERTHIIDÆ.

Tail equal to or longer than wing, graduated rectrices rigid and pointed at tip	<i>Certhia</i> , p. 214
Tail shorter than wing, even, rectrices broad, soft, rounded at tip	<i>Tichodroma</i> , p. 218

Genus CERTHIA L.

CERTHIA Linnæus, Syst. Nat., ed. x, i, p. 118 (1758—Type by subsequent designation and elimination: *C. familiaris* L.).

Small, brownish, streaked birds, generally seen climbing up trunks and branches of trees. Bill laterally compressed, culmen ending in acute point, nostrils longitudinal, exposed. Tongue long, narrow, corneous, terminating in about five bristles. Wing rounded, 4th and 5th primaries longest, 6th scarcely shorter, 2nd much shorter than 3rd and between 7th and 8th, 1st somewhat less than half 2nd. Tail distinctly graduated, rectrices with rigid and acuminate tips. Tarsus distinctly scutellate. Plumage rich, long and soft. Sexes alike in colour, young of more spotted appearance, but almost same colours. One moult. Non-migratory. More northern portions of northern hemisphere, in America south to Nicaragua, in Africa to Atlas mountains, in Asia to Burma. Five species, about thirty subspecies.

CERTHIA FAMILIARIS

87. *Certhia familiaris britannica* Ridgw.—THE BRITISH TREE-CREEPER.

CERTHIA BRITANNICA Ridgway, Proc. U.S. Nat. Mus., v, p. 113 (1882—England).

Certhia familiaris Linnæus, Yarrell, i, p. 468; Saunders, p. 117; *Certhia f. britannica* Ridgw., Hartert, Brit. B., i, p. 218.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head, crown and nape deep brown, much streaked pale rufous-brown or whitish;

mantle and scapulars paler, more rufous-brown and rather more uniform, pale streaks not so distinct, and only edges of the feathers dark brown; lower back and rump bright rufous, almost uniform,



The British Tree-Creeper (*Certhia f. britannica*).

but each feather with faint pale central streak and the concealed portion with a whitish patch between the rufous distal, and black proximal portions; upper tail-coverts uniform pale brown tinged rufous; lores blackish; superciliary stripe white tinged rufous; ear-coverts mottled whitish, rufous and black; chin, throat, breast, under wing-coverts and axillaries silvery-white; flanks, belly and under tail-coverts washed pale buff (under-parts are usually somewhat dirty and sometimes quite sooty, probably by contact with dirty trees, etc.); tail-feathers pale brown with shafts pale but central portions alongside shafts darker brown; primaries dark brown, three outermost uniform but rest and secondaries with a broad buff band across their centres margined above and below with blackish, outer webs towards tips duller buff and tips whitish, innermost secondaries without buff transverse band; bastard-wing and primary-coverts black with pale buff tips and bases; greater coverts same but with broad rufous-brown fringes to outer webs; median coverts brown-black with rufous-buff tips; lesser coverts pale brown with paler tips. This plumage is acquired by complete moult in Aug.-Oct. *Summer*. No moult and abrasion has no noticeable effect. (N.B.—The feathers, especially of rump, are of loose structure.)

Nestling.—Down, greyish-black, long and plentiful; distribution, inner supra-orbital and occipital. Mouth, inside yellow, no spots; externally flanges yellowish-white.

Juvenile.—Like adult, but upper-parts less rufous and with larger pale buff centres to the feathers, giving more spotted appearance; rump pale rufous-brown not bright rufous; under-parts dull white (not silvery), throat, breast and flanks with minute brown freckles; belly and under tail-coverts pale buff.

First Winter.—Like adult. The juvenile body-feathers, wing-coverts and innermost secondaries are moulted in Aug.-Oct., but not primary-coverts nor rest of wing-feathers or tail-feathers.

Measurements and structure.—♂ wing 62–67 mm., tail 58–62, tarsus 15–16, bill from skull 14–17 (12 measured). ♀ wing 59–67, bill 13–17. Primaries: 1st about twice primary-coverts and about half 2nd primary, 4th and 5th longest, 6th usually 1 mm. shorter but sometimes as long, 3rd 1–3 shorter, 2nd 9–12 shorter and equal to 8th or 9th; 4th to 6th clearly emarginated outer webs. Secondaries equal 10th primary, tips sloped off to blunt point. Tail graduated, forming wedge-shape, each feather stiff and strong and tapering towards tip to a point. Bill fine, compressed, decurved and sharp-pointed. No rectal bristles. Tarsal joint hidden by feathers. Toes, three in front, one behind. Claws strong and much curved, hind claw rather longer than hind toe.

Soft parts.—Bill dark brown, lower mandible pinkish; legs and feet pale brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *C. f. familiaris* see under that form. *C. f. macrodactyla* (France, Germany, Hungary) is intermediate in coloration between *C. f. familiaris* and *C. f. britannica*, and is much like latter but brown of upper-parts and especially rump is less rufous, *C. f. corsa* (Corsica) is like *C. f. macrodactyla* but larger and more distinctly streaked on mantle, *C. f. bianchii* (Kansu) and *C. f. tianschanica* (Tian-Shan) differ slightly in coloration of upper-parts, *C. f. khamensis* (Mekong, Tibet) and *C. f. nipalensis* (Nepal, Sikkim) have darker under-parts, *C. f. hodgsoni* (Kashmir) is much like *C. f. macrodactyla*, but 4th primary has no light mark on outer web, *C. f. japonica* (Japan) is much like *C. f. familiaris* with colours of upper-parts more contrasted. The species *Certhia brachydactyla* represented by several forms, often living side by side with forms of *C. familiaris* in Europe (but absent from British Isles) differs from *C. familiaris* in having shorter hind claw, longer bill, dark spot on under wing-coverts at base of 1st primary (usually absent in forms of *C. f. familiaris*) and usually darker and less rufous upper-parts and darker flanks. The stiff pointed tail and slender curved bill distinguish Tree-Creeper from other British birds.

FIELD-CHARACTERS.—Soberly coloured, mottled brown above and silvery-white below, would often escape notice but for very characteristic behaviour. Constantly hunting for insects, it ascends trunks and limbs of trees, and more rarely walls, by jerky leaps, then flies obliquely downwards to foot of another tree and again ascends. Stiff long tail-feathers pressed against bark in climbing. Call-note a weak “zee-zee.” Song “zee, zee, zee, pee, zee, zee, zissy, pee,” deliberate at first but quicker as it proceeds, is uttered during pauses in ascent. During winter often associates with bands of Tits and Goldcrests.

BREEDING-HABITS.—Usually nests behind loose bark on the trunks of trees, or behind ivy roots where they have become separated from the stem. Also occasionally in crevices of buildings, in loose stone-walls, or even in masses of dead leaves accumulating in trees.

Nest.—Foundation of birch twigs, moss, roots, grass, etc., lined feathers, bark and bits of wool, with a few twigs in the outer rim.

Eggs.—Usually 6, occasionally 5 or 7; white with a zone of red-brown spots at the big end, varying in intensity. The presence of reddish-violet shell-marks distinguishes them from the eggs of the Crested Tits. Average of 100 eggs, 15.5×12.1 mm.

Breeding-season.—Latter part April and early May, also June. *Incubation.*—Lasts 15 days from laying last egg (W. Evans). Two broods sometimes reared.

FOOD.—Almost entirely insects: coleoptera, orthoptera, larvæ of lepidoptera, diptera, and hymenoptera. Spiders, their eggs and webs are also eaten; and occasionally one or two seeds have been found in stomachs.

DISTRIBUTION.—Confined to *British Isles*. Resident. Generally distributed in suitable localities, but only once recorded O. Hebrides (Lewis, Oct., 1915, during gale) and very rarely seen in Shetlands and Orkneys.

88. *Certhia familiaris familiaris* L.—THE NORTHERN TREE-CREEPER.

CERTHIA FAMILIARIS Linnæus, Syst. Nat., ed. x, i, p. 118 (1758—Europe. Restricted typical locality: Sweden).

DESCRIPTION.—*Adult male and female.*—Like *C. f. britannica*, but upper-parts considerably paler, pale streaks on head being white; pale portion of feathers of mantle and scapulars larger and whiter and rest of feathers paler brown; rump paler rufous; inner secondaries and pale markings on other secondaries, primaries and wing-coverts buffish-white, much paler than in *C. f. britannica*; eye-stripe pure white; under-parts pure silvery-white with very pale buff wash on belly, flanks, and under tail-coverts. Moults as in *C. f. britannica*.

Measurements and structure.—♂ wing 63–67 mm., tail 61–66, tarsus 14–16, bill from skull 14–16 (12 measured). ♀ wing 60–65, bill from skull 13–16. Structure as in *C. f. britannica*.

FIELD-CHARACTERS.—Its paler upper-parts and pure white under-parts give it a very distinct appearance as compared to the British form (H.F.W.).

BREEDING-HABITS.—Closely resemble those of the British race. The paper-like outer bark of the birch is often used in nest-building.

Eggs.—Rather lightly marked as a rule; average of 26 eggs, 15.5×12.1 mm. *Breeding-season*.—Begins in mid-April in S. Scandinavia.

Food.—Similar to that of the British race.

DISTRIBUTION.—*Scotland*.—Two. Male (exhausted) Fair Isle, Dec. 27, 1906 (W. Eagle Clarke, *Ann. S.N.H.*, 1907, p. 72). Female, Fair Isle, April 14, 1913 (*id.*, *Scot. Nat.*, 1914, p. 54). Records of Tree-Creepers from Orkneys and Shetlands, especially from latter during a gale, Sept., 1859 and in Oct., 1882 with Great Spotted Woodpeckers, may relate to this form.

DISTRIBUTION.—*Abroad*.—Scandinavia, north Russia and Poland, south to Carpathian Mountains, Siberia to sea of Ochotsk, also in east Germany. This form is replaced by other races on mountains of Corsica, central and west Europe generally, the Caucasus, Persia, and many other parts of Asia. In many parts of Europe we find side by side with a race of *Certhia familiaris* a race of another species (*Certhia brachydactyla*), and forms of this species take the place of *C. familiaris* in most parts of south Europe, Cyprus, north-west Africa, and apparently Asia Minor, or at least parts of it, as also in North America.

Genus TICHODROMA Ill.

TICHODROMA Illiger, Prodr. Mamm. Avium, p. 210 (1811—Monotype *T. muraria* (L.)).

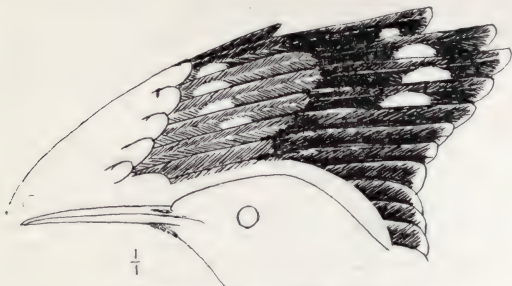
Larger than Tree-Creepers; grey, red and black, generally seen climbing up rocks in mountains. Bill much longer than head, laterally much compressed except near base, nearly straight, very little curved. Nostrils forming narrow, slit-like opening. Tongue long, very thin, divided at tip, but without bristles. Wing broad, much rounded, 4th, 5th and 6th primaries longest, 3rd but a little shorter, 2nd about equal to 8th, 1st a little less than half 2nd. Secondaries broad, about four-fifths length of wing. Tail almost square, somewhat less than two-thirds wing; rectrices broad, rounded at tip, soft. Under tail-coverts covering two-thirds of tail. Plumage very soft. Tarsus covered in front with single long lamina. Double moult (complete autumn and partial spring). Sexes alike in colour, young not very different. Non-migratory. Alpine districts of central and south Europe, Palæarctic Asia and Himalayas. (Said to occur in Atlas and Abyssinia, but no proof.) One species and no subspecies.

TICHODROMA MURARIA

89. *Tichodroma muraria* (L.)—THE WALL-CREEPER.

CERTHIA MURARIA Linnæus, Syst. Nat., ed. XII, i, p. 184 (1766—S. Europe). *Tichodroma muraria* (Linnæus), Yarrell, III, p. ix; ; Saunders, p. 119.

DESCRIPTION.—*Adult male and female. Winter.*—Fore-head and crown pale greyish-brown, tinged here and there pink; back of neck, mantle, and scapulars French-grey to pale ash-grey; back



The Wall-Creeper (*Tichodroma muraria*).

slightly darker; rump and upper tail-coverts dark slate-grey; lores dark slate-grey; ear-coverts as crown but lower part white; chin and throat white; breast and belly dark slate-grey; under tail-coverts same but tipped white; axillaries and under wing-coverts same but with broad edges and tips of pink; tail-feathers brown-black tipped grey, outer pair with broad white band above grey tip, next (penultimate) pair with smaller white mark on inner web only above grey tip; primaries brown-black tipped grey, 1st uniform, 2nd to 5th with two large white spots on inner webs (occasionally the proximal spot on 5th is reduced or absent), rest either without spots or with a pale buff or rufous-buff spot on basal half of inner web, 3rd to 10th with basal half of outer web bright crimson; secondaries like inner primaries but spot when present usually bright rufous-buff, innermost secondaries fringed grey on distal part of outer webs (N.B.—The basal spot on inner primaries and secondaries varies considerably in size, while sometimes it is entirely absent and sometimes present on only a few feathers); primary-coverts brown-black, outer webs crimson; greater coverts same but bases and inner feathers grey; median and lesser coverts bright crimson with ashy-grey bases. This plumage is acquired by complete moult in Aug.-Sept. and even as late as Nov. *Summer.*—The body-plumage is moulted in Feb.-March, but apparently not wing-coverts, wing- or tail-feathers. Fore-head and crown become French-grey tinged here and there pink; mantle and scapulars rather paler than crown, but not so ashy as is usual in winter plumage; lores, most ear-coverts, whole chin and throat extending to upper-breast black; rest of plumage as in winter, but wing- and tail-feathers browner.

Nestling.—(Not examined. A full feathered skin has long pale grey down still remaining on feathers of occipital and supra-orbital regions.)

Juvenile.—Closely resembling adult winter but fore-head and crown not so brown; chin and throat smoke-grey, tinged brownish; breast and belly not quite so dark as adult and tinged brownish.

First Winter.—Like adults. The juvenile body-feathers are moulted in Aug.-Nov., but apparently not tail- or wing-feathers or wing-coverts.

Measurements and structure.—♂ wing 93-110 mm., tail 53-61, tarsus 20-24, bill from feathers on ridge of culmen 23-30 (12 measured). ♀ wing 93-104, bill 23-28. Primaries: 1st about twice primary-coverts and half 2nd, 4th and 5th longest, 6th as long or 1-2 mm. shorter, 3rd 3-5 shorter, 2nd 13-20 shorter, and equal to 9th or 10th; 3rd to 6th emarginated outer webs. Secondaries equal 10th primary, tips sloped off to blunt point. Tail almost square. Tail-feathers rounded and not stiff. Bill fine, flattened at base but distal half compressed, slightly decurved, point not very sharp. No rictal bristles. Tarsal joint hidden by feathers. Claws strong and much curved, hind claw rather longer than hind toe.

Soft parts.—Bill black; legs and feet black; iris brown-black.

CHARACTERS.—No subspecies. Long, slender, black bill, crimson on wings and white spots on primaries clearly distinguish it.

FIELD-CHARACTERS.—Can hardly be confused with any other bird—haunts rocks, precipices and walls, exploring their faces with Creeper-like action and curious butterfly-like flight, giving glimpses of crimson on expanded wings contrasting with black tail, tipped white (F.C.R.J.).

BREEDING-HABITS.—Nests in crevices or recesses of precipices, generally in most inaccessible spots. *Nest*.—Built of moss, roots, grasses and bits of wool, lined with felted wool and hair and a feather or two. *Eggs*.—Usually 4, sometimes 5; white, sparsely freckled with fine reddish-brown specks, chiefly at the big end, sometimes practically unmarked. Average of 31 eggs, 20.8×14.8 mm. *Breeding-season*.—From the end of May to mid-June. *Incubation*.—Chiefly at any rate by the female.

FOOD.—Almost entirely insects, especially larval stages and eggs of diptera, lepidoptera, coleoptera and hymenoptera. A small snail (*Balea perversa*) has once been recorded, and spiders are largely eaten.

DISTRIBUTION.—*England*.—Six or seven. One Stratton Strawless (Norfolk), Oct., 1792. One Sabden (Lanes.), May 8, 1872. One Winchelsea (Sussex) about 1886 (*cf.* Saunders, p. 119). Female near Hastings (Sussex), Dec. 26, 1905 (W. R. Butterfield, *Bull.*

B.O.C., xvi, p. 44). Male, Camber (Sussex), Nov. 1, 1912 (H. W. Ford-Lindsay, *Brit. B.*, vi, p. 218). Female, Ecclesbourne (Sussex), Dec. 28, 1915 (J. B. Nichols, *op. c.*, xii, p. 67). One seen Mells, Somerset, Sept. 1901 (J. Wigglesworth, *op. c.*, xii, p. 185).

DISTRIBUTION.—*Abroad*—Mountain-ranges of central and south Europe, east to Mongolia, Turkestan, and Himalayas. Stragglers occasionally seen far away from their breeding-places (Germany, Brittany, Normandy, Alderney, etc.).

FAMILY SITTIDÆ.

Small, scansorial, ten-primaried Oscines with straight, subulate, unnotched bill. Nostrils roundish, non-operculate and partly concealed by antrorse feathers, or with an operculum and entirely exposed (*Neositta* and *Daphænositta* in Australia and New Guinea). Tarsus short, distinctly scutellate (except in *Neositta*). Toes large, with large laterally compressed claws, inner toe reaching only to second joint of middle toe, hallux equal to outer toe. Wings long and pointed. 1st primary very small, less than one-third of 2nd, 3rd and 4th or 3rd, 4th and 5th primaries longest, 2nd equal to or slightly longer than 7th (except *Neositta*). Tail short, soft, straight, twelve rectrices, broad with rounded tip. Nests in holes of trees or crevices of rocks, eggs white with rufous spots (except *Neositta*). Palearctic, Nearctic, Indo-Malayan and Australian regions. Only one genus Palearctic. Non-migratory.

Genus SITTA L.

SITTA Linnæus, *Syst. Nat.*, ed. x, i, p. 115 (1758—Monotype: *S. europæa*).

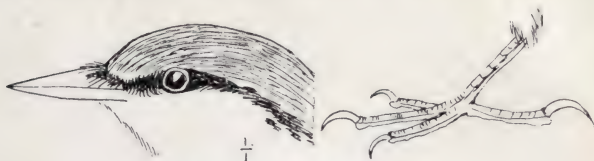
Bill robust, nearly as long as head, about equal to tarsus, at base somewhat wider than deep; culmen quite or nearly straight, rounded above; gonys more or less ascending terminally. Nostrils roundish or oval, non-operculate, almost entirely concealed by antrorse bristly feathers. Rictal bristles present, though short and soft. 3rd to 5th primaries longest, 4th usually slightly longer; 2nd equal to 7th or slightly longer; 1st very small, sometimes scarcely longer than primary-coverts. Wing-tip decidedly longer than bill or tarsus. Tarsus distinctly scutellate. Palearctic, Nearctic and Indo-Malayan regions. Fifteen or sixteen species in at least forty-six subspecies.

SITTA EUROPÆA

90. *Sitta europæa britannica* Hart. — THE BRITISH NUTHATCH.

SITTA EUROPÆA BRITANNICA Hartert, Nov. Zool., 1900, p. 526 (England). *Sitta cæsia* Wolf, Yarrell, i, p. 473; Saunders, p. 113; *S. e. britannica* Hartert, *Brit. B.*, i, p. 218.

DESCRIPTION.—*Adult male. Winter.*—Whole upper-parts uniform blue-grey ; indistinct ashy-grey mark over eye ; broad black stripe from nostrils, through lores and eye to side of back of neck often



The British Nuthatch (*Sitta e. britannica*).

reaching the “ shoulders ” where it tends to become spread ; under eye, most ear-coverts, chin and upper-throat white ; rest of throat, breast and belly buff ; flanks chestnut and buff ; under tail-coverts buffish-white broadly fringed chestnut ; axillaries pale buff ; under wing-coverts black with white patch at base of outer primaries ; tail : central pair as upper-parts, rest black tipped grey, three outermost pairs with white patch on inner web above grey tip and outermost pair with similar white patch also on outer web ; primaries black-brown very narrowly fringed blue-grey on outer webs and more broadly white on inner webs, outer feathers with concealed white bases and with a slight ashy mark on outer web where emargination begins ; secondaries black-brown with outer webs more broadly edged blue-grey than primaries and innermost feathers mostly blue-grey ; primary-coverts black-brown fringed blue-grey on outer webs ; rest of wing-coverts blue-grey with brownish tinge on inner webs. This plumage is acquired by complete moult in August. *Summer.*—No moult. Abrasion causes buff of under-parts to become a little paler.

Adult female. Winter and summer.—Like adult male, but chestnut of flanks usually paler.

Nestling.—(Not examined.)

Juvenile.—Like adult, but upper-parts duller and tinged brownish, stripe through lores and eye brown-black, flanks and under tail-coverts buff and dull rusty-red rather than bright chestnut.

First winter. Male and female.—Like adult. The juvenile body-feathers and lesser and median wing-coverts are moulted in July-Aug., but not greater coverts, primary-coverts nor wing- or tail-feathers.

Measurements and structure.—♂ wing 83-88 mm., tail 43-46, tarsus 19-20, bill from skull 18-20 (12 measured). ♀ wing 80-86. Primaries : 1st twice as long or one-third longer than primary-coverts and about one-third as long as 2nd, 4th and 5th longest, 3rd 1-2 mm. shorter, 2nd 6-11 shorter, 6th 2-4 shorter ; 3rd to 5th

emarginated outer webs. Secondaries between 9th and 10th primaries, tips almost square. Tail-feathers rounded and not stiff, tail almost square. Bill strong, wedge-shaped, sloped off to fairly sharp point. A few, fine, short rictal and nasal bristles, and nostrils almost covered with short bristle-like feathers. Claws strong and curved, hind claw decidedly shorter than hind toe.

Soft parts.—Bill dark slate, base of culmen and basal two-thirds of lower mandible grey; legs and feet yellowish-brown; iris dark greyish-brown.

CHARACTERS AND ALLIED FORMS.—*Sitta e. cæsia* (middle Europe) much resembles *S. e. britannica* but buff of under-parts is usually of a deeper shade, *S. e. hispaniensis* (Spain) is much like *britannica* but smaller and with shorter bill, *S. e. caucasica* (Caucasus) has dark under-parts and short bill, *S. e. levantina* (Asia Minor, Palestine) has paler under-parts and much finer bill, *S. e. persica* (Persia) is similar but paler above and below, *S. e. europæa* (Scandinavia, north Russia) has white under-parts, *S. e. homeyeri* (east Prussia) has more cream-coloured under-parts, *S. e. uralensis* (east Siberia) is much like *S. e. europæa* but smaller, *S. e. albifrons* (Kamtschatka) has paler upper-parts and white fore-head; several other forms inhabit China, while others have been named but are doubtful. Blue-grey upper-parts, chestnut flanks, and wedge-shaped bill are unmistakable specific characters.

FIELD-CHARACTERS.—Differs alike in coloration and form from all other British birds. Unlike Tree-Creeper does not use tail in climbing, and moves upwards, downwards and sideways indifferently. Presence often made known by loud tapping as it hacks nuts, and by shells of hazel nuts, acorns, beech-mast and yew seeds wedged into crevices of bark. In flight, which is slow and undulating, short tail, stout head and strong pointed bill very apparent. Call-note a clear loud "twi-twit." In spring this note is repeated by male so rapidly as to produce a bubbling cry. Another spring call is a loud clear whistle.

BREEDING-HABITS.—Usually in a hole in the stem or large branch of a tree at varying heights, occasionally in holes of walls, in Sand-Martins' holes or old Magpies' nests, and twice recorded from the side of a haystack. Nesting-boxes also often occupied. The entrance to the hole is nearly always reduced in size with hard mud. *Nest.*—Hole usually lined with bark of Scotch fir, less frequently birch bark or dried leaves of oak and beech. *Eggs.*—5-11, usually 5-8; white, more or less boldly spotted with red-brown and a few violet shell-marks; occasionally almost unmarked. Average of 100 eggs, 19.2×14.3 mm. *Breeding-season.*—From the end of April to mid-May, also sometimes late in June. *Incubation.*—Lasts about 13-14 days, probably by hen only. One brood normally, occasionally two.

FOOD.—Chiefly hazel nuts in autumn, also beech-mast, acorns, seeds of yew, Portugal laurel, etc. Also insects; coleoptera, orthoptera, diptera, hemiptera, larvæ of gall insects. Spiders and small mollusca also recorded.

DISTRIBUTION.—Confined to *Great Britain*. Resident. Tolerably common south and central England, rarer west Cornwall and Wales, and very rare western Wales, though in recent years becoming established in Carnarvonshire, and twice recorded from Anglesey. In Isle of Wight unknown. Very local Cheshire and Yorks., north of which counties only a straggler, but has occasionally bred. In Scotland has occurred three or four times in south-east (said to have bred near Ednam (Roxburgh) about 1850), two were seen Skye, and is said to have occurred in Shetlands. In Ireland one seen Malahide (Dublin), March 26, 1911, was no doubt introduced (*cf. Brit. B.*, v, pp. 28 and 229).

Represented by *S. e. europæa* in Scandinavia, north Russia, and Denmark, and by other forms in other parts of Europe, also in west Asia (south to south-west Persia) and north Asia as far east as Japan and Kamtschatka.

FAMILY PARIDÆ.

Small ten-primaried Oscines with the bill shorter than head and wing rounded. Nostrils small, roundish, more or less concealed by antrorse short feathers. Rictal bristles not very conspicuous, but generally present, though sometimes obsolete. Wings long, rounded, 3rd to 6th, 3rd to 5th, or 4th to 6th primaries longest, first half as long as second or less, sometimes rudimentary. Tail of twelve rectrices, variable in length and shape. Tarsus longer than middle toe with claw, scutellate or "booted." Plumage soft and copious. Northern hemisphere in general, Indo-Malayan, Australian, New Zealand and Ethiopian regions, in South America the genus *Polioptila*, which is now generally considered to belong here.

Key to genera of family PARIDÆ.

- | | | | |
|-----|---|---|---------------------------|
| 1 { | Nostrils covered by single stiff tiny feather | 2 | <i>Regulus</i> , p. 250 |
| | Nostrils covered by antrorse bristles | 2 | |
| 2 { | Tail slightly rounded or emarginate, not strongly | | |
| | graduated | 3 | <i>Parus</i> , p. 225 |
| | Tail strongly graduated | 3 | |
| 3 { | Under tail-coverts half as long as longest tail- | | |
| | feathers | | <i>Panurus</i> , p. 256 |
| | Under tail-coverts much less than half as long as | | |
| | longest tail-feathers | | <i>Egithalos</i> , p. 246 |

Genus PARUS L.

PARUS Linnaeus, Syst. Nat., ed. x, i, p. 189 (1758—Type by subsequent designation : *P. major*).

Comprising all our Titmice, with the exception of the Long-tailed and Bearded Tits. Bill variable as to shape and size, but more or less strong. Nostrils non-operculate, completely concealed by dense, antrorse plumules. Tongue, obtuse, its tip with strong bristles. Wing rounded, 1st primary much less than half as long as 2nd, considerably longer than primary-coverts, 2nd shorter than 3rd and 7th, equal to 9th or 8th. Tail rounded or slightly emarginate, never much graduated. Tarsus strong, front scutellate. Sexes not conspicuously different. The latest review of the genus by Hellmayr (1911) recognizes forty-seven species in one hundred and sixty-nine subspecies. Nests in holes, eggs spotted. Habitat : Palæarctic, Nearctic, Indo-Malayan, and Ethiopian regions.

Key to species of genus PARUS.

- | | | | | |
|---|---|--|---|---------------------------------|
| 1 | { | Back greenish | 2 | |
| | { | Back brown, brownish, grey or greyish | 3 | |
| 2 | { | Larger, wing 70 mm. or more, continuous dark area (black in adult, grey-brown in young) from bill to chest | | <i>P. major</i> , p. 225 |
| | { | Smaller, wing under 70 mm., only slaty or grey bar across lower throat | | <i>P. caeruleus</i> , p. 230 |
| 3 | { | Head distinctly crested | | <i>P. cristatus</i> , p. 238 |
| | { | Head not crested | 4 | |
| 4 | { | Upper wing-coverts with whitish bars or spots | | <i>P. ater</i> , p. 233 |
| | { | Upper wing-coverts uniform | 5 | |
| 5 | { | Adult with tips of feathers of crown distinctly glossy | | <i>P. palustris</i> , p. 241 |
| | { | Adult with tips of feathers of crown without any gloss | | <i>P. atricapillus</i> , p. 243 |

PARUS MAJOR

91. *Parus major major* L.—THE CONTINENTAL GREAT TITMOUSE.

PARUS MAJOR Linnaeus, Syst. Nat., ed. x, i, p. 189 (1758—"Habitat in Europa." Restricted typical locality : Sweden).

DESCRIPTION.—In coloration like British Great Titmouse : mantle sometimes paler and "cleaner" looking but no constant difference. Bill shorter and decidedly more slender, being narrower (more compressed) and less deep, and this is more apparent by comparison than by measurement. N.B.—An individual variation with pale cream-colour instead of bright yellow under-parts is not infrequent, especially in more southern portions of range of *P. major*.

Measurements and structure.—♂ wing 73-79 mm., tail 60-68, tarsus 19-21, bill from skull 10-11, width at nostrils 4-5 (12 measured). ♀ wing 70-77, bill from skull 9.5-11, width at nostrils 4-4.5.

CHARACTERS AND ALLIED FORMS.—*P. m. excelsus* (north-west Africa) has bill intermediate between *P. m. major* and *P. m. newtoni* and fringes of innermost secondaries ashy-grey not yellow, *P. m. corsus* (Corsica, Sardinia) similar but slightly smaller and breast and belly cream-coloured and flanks greyish, *P. m. blanfordi* (Persia, Palestine) has paler upper- and under-parts, and even juvenile has fringes of secondaries blue-grey and those of innermost secondaries ashy-grey, several other forms very similar to *P. m. major* have been separated; *P. m. bokharensis* (Turkestan), *P. m. intermedius* (east Persia, Afghanistan) and *P. m. caschmirensis* (Kashmir) differ in having blue-grey upper-parts and whitish under-parts; *P. m. minor* (Manchuria) and *P. m. commixtus* (south China) are similar but have mantle washed yellowish-green.

BREEDING-HABITS.—Similar to those of the British Great Tit
Eggs.—Also indistinguishable, but slightly smaller on the average, 17.2×13.4 mm. *Breeding-season.*—In central Europe from end April onward and in late May in the Baltic provinces. Apparently two broods, as a rule.

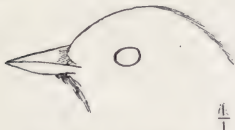
FOOD.—Similar to that of the British race.

DISTRIBUTION.—*British Isles.*—Great numbers Norfolk and Suffolk coasts Oct., 1910 (C. B. Ticehurst, *Brit. B.*, iv, p. 247). Others at same time Kent and in Scilly Isles in Nov. (N. F. Ticehurst, *l.c.*, p. 248), and Haddington and Lincolnshire coasts and Lines. and Essex lights in Oct. (*Bull. B.O.C.*, xxx, p. 230). Return migration observed Suffolk (Feb., Mar., and April, 1911) and Kent (Mar. one obtained) (*t.c.* p. 164). One, Isle of May, Oct. 15, 1910 (E. V. Baxter and L. J. Rintoul, *Ann. S.N.H.*, 1911, p. 3). One Fair Isle, Nov. 17, 1910, and one probable Shetlands, Oct. 25, 1910 (*id.*, *l.c.*, p. 136). Six or seven seen Lerwick (Shetlands), Oct., 1914, and one Dec. probably of this form (*Scot. Nat.*, 1915, pp. 115, 190), about a dozen Fair Isle end Oct., two staying until end Jan., 1915 (*l.c.*, p. 103). In Oct., 1910, many, probably of this form, seen in Yorks., and apparently immigrant Great Tits have often been noted in autumn on east coasts England, and particularly in 1878, 1883, 1884, 1886, 1889, and 1901 (*cf. Birds Yorks.*, i, p. 108), while what was deemed a return migration was noted in Norfolk in Feb., 1848 (*Birds Norfolk*, i, p. 140), but no examples of these earlier immigrations have been identified.

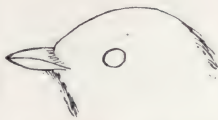
DISTRIBUTION.—*Abroad.*—Europe generally to Mediterranean, east to west Siberia and Altai. Replaced by allied forms on Mediterranean islands and Greece, north-west Africa and many parts of Asia.

92. *Parus major newtoni* Prazak—THE BRITISH GREAT TITMOUSE.

PARUS MAJOR NEWTONI Prazak, Orn. Jahrb., v, p. 239 (1894—England).
Parus major Linnaeus, Yarrell, I, p. 479; Saunders, p. 103; *P. m. newtoni* Prazak, Hartert, Brit. B., I, p. 213.



The British Great Titmouse.
 (*Parus m. newtoni*).
 Note larger bill,



The Continental Great Titmouse.
 (*Parus m. major*).
 Note smaller bill,

DESCRIPTION.—*Adult male. Winter.*—Fore-head, lores, crown, and nape glossy blue-black; nuchal spot pale greenish-yellow; mantle and scapulars yellowish-green; back same, feathers tipped blue-grey; rump and upper tail-coverts blue-grey; cheeks and ear-coverts white; chin black; throat and gorget blue-black joined to nape by broad blue-black band at base of sides of neck (some feathers in this band are blue-black with green tips); centre of breast and belly black, rest of breast and belly and flanks chrome-yellow; vent and under tail-coverts black in centre, white at sides; axillaries whitish-yellow; under wing-coverts white with brownish-black bases; tail blue-grey on outer webs, brown-black on inner webs, but central pair with most of inner webs blue-grey and shafts black, outer pair with outer web white and a wedge of white (of varying size) on distal portion of inner web, next (penultimate) pair with small white tip and following pair often with small white spot at tip; primaries and secondaries black, fringed blue-grey on outer, and white on inner, webs, 1st and 2nd primaries not fringed, 3rd to 7th with distal emarginated portion of outer webs dull white and basal half fringed blue-grey, inner secondaries with outer webs broadly fringed greenish-yellow; bastard-wing black, fringed white; primary-coverts black, outer webs fringed blue-grey; greater coverts black, fringed blue-grey and broadly tipped white (tips of inner feathers yellowish); median and lesser coverts blue-grey. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—No moult. Abrasion makes crown and throat less glossy, wearing off of green tips makes blue-black of bands at sides of neck broader, fringes of outer webs of wing-feathers and tips of greater coverts become reduced by wear.

Adult female.—Like adult male but duller; blue-black of crown and throat and gorget less glossy; black in centre of breast

and belly not so intense and less extensive ; edgings of secondaries and greater coverts tinged greenish, not so pure blue-grey ; blue-grey of primary-coverts and tail duller.

Nestling.—Down smoke-grey, fairly long ; distribution, inner supra-orbital and occipital (fairly plentiful), humeral and spinal (scanty). Mouth, inside orange, no spots ; externally flanges pale lemon-yellow.

Juvenile. Male.—Fore-head, lores, crown and nape sooty-black ; nuchal spot very pale yellow ; mantle and scapulars much duller and browner than adult ; rump and upper tail-coverts sooty-grey ; cheeks, ear-coverts and sides of neck yellowish-white ; chin and throat greyish-soot and narrow line of same down centre of breast and belly ; rest of breast and belly and flanks rather duller yellow than adult ; vent and under tail-coverts white, tinged yellow ; tail as adult but blue-grey of outer webs much duller and inner webs of central pair with little blue-grey ; primaries much as adult but with duller blue-grey fringes ; secondaries with fringes greenish, innermost secondaries browner, not so black as in adult ; primary-coverts brown fringed dull bluish-grey ; greater coverts smoke-grey, tipped whitish-yellow ; median and lesser coverts browner with faint tinge of greenish. *Female*.—Like male but fringes of tail- and wing-feathers still duller and primary- and greater coverts browner.

First winter. Male.—Like adult but fringes of wing- and tail-feathers and primary-coverts differing as in juvenile, except the newly-moulted feathers which are like adult. The juvenile body-feathers, greater, median and lesser wing-coverts, two (occasionally three) innermost secondaries, central pair of tail-feathers (occasionally whole tail) are moulted in Aug.-Sept. but not rest of wing-feathers. *Female*.—Like adult female but primary-coverts much browner with greyish not blue-grey fringes, fringes of primaries greenish and of secondaries green, outer webs of tail-feathers duller except when moulted.

Measurements and structure.—♂ wing 73-78 mm., tail 58-64, tarsus 20-22, bill from skull 11-12.5, width at nostrils 5-6 (12 measured). ♀ wing 70-77, bill from skull 11-12, width at nostrils 4.5-5. Primaries : 1st 9-12 mm. longer than primary-coverts, 2nd between 8th and 10th, 4th to 6th longest, 3rd and 7th 2-4 shorter ; 3rd to 7th emarginated outer webs. Secondaries equal 10th primary, tips rounded. Tail almost square. Bill stout and strong. Good many rictal and nasal bristles, short bristle-like feathers covering nostrils. Tarsal joint feathered.

Soft parts.—Bill black, with horn-colour tip and cutting edges ; legs and feet lead-blue ; iris brown-black.

CHARACTERS AND ALLIED FORMS.—For allied forms see p. 226. Large size and black central line on under-parts are distinctive specific characters.

FIELD-CHARACTERS.—Largest British Tit. Differs from all others in broad black band down middle of sulphur-yellow breast and belly. Cheeks white, crown glossy black. From autumn to spring associates with other Tits and Goldcrests in woodlands and hedgerows. The individual members of these bands are in constant motion, assuming every variety of acrobatic posture as they hunt for food. Flight of all is weak and uncertain, consisting mainly of short passages from tree to tree. Their cries are a confusing medley, for all have—with slight modification—a common call-note, a low squeak, “tsee, tsee, tsee,” which is shared too by Goldcrest and Creeper, but each species has certain distinctive notes, *e.g.*, the Chaffinch-like “pink, pink” and saw-sharpening “teacher, teacher, teacher” of this species.

BREEDING-HABITS.—Usually nests in a hole of a tree or wall, occasionally in crevices of rock or in foundations of nests of larger birds; also in Kingfishers’ burrows and even in old nests of Thrush, Blackbird, Hedge-Sparrow, etc. Nest-boxes, letter-boxes, flower-pots, bee-hives, and almost any kind of hole may be used in default of natural sites. *Nest.*—Built of moss, with a few bents, lined with a thick layer of felted hair or down, with which the eggs are covered in the absence of the bird. *Eggs.*—6 to 11 as a rule, but nests with 12 to 17 eggs are on record, probably in some cases laid by two birds; white, sparingly or thickly blotched and spotted with reddish-brown, showing much variation. Some have no markings. Average of 100 eggs, 17.9×13.5 mm. *Breeding-season.*—Begins about end April or early May, sometimes also in June. *Incubation.*—Lasts 14 days (Evans); 12-13 (Steele-Elliott); probably by hen only. One brood as a rule.

FOOD.—Undoubtedly does some damage by destruction of buds in spring, and fruit in autumn, but also destroys great quantities of insects (coleoptera, larvæ and imagines of lepidoptera (especially winter moth and mottled umber), hymenoptera, orthoptera); also aphides, spiders, scale insects, small mollusca and earthworms. Besides fruit, peas, chestnuts, wheat and maize are occasionally taken, and it has been known to kill a bat, and young birds, attacking the brain. Young fed largely on moth larvæ; Newstead estimates that one pair will destroy 7,000 to 8,000 insects, chiefly caterpillars, in about 3 weeks.

DISTRIBUTION.—Confined to British Isles. *England, Wales, and Ireland.*—Resident. Generally distributed. *Scotland.*—Resident. Generally distributed in south and central portions; becoming scarce north Argyll and north of Loch Ness; in north Sutherland, Caithness, Orkneys and Shetlands Great Tits (whether of this form or *P. m. major* not ascertained) are only occasional visitors; breeds Islay, Jura, and Mull, but only rare visitor Skye, and unknown O. Hebrides.

PARUS CÆRULEUS

93. *Parus cæruleus cæruleus* L.—THE CONTINENTAL BLUE TITMOUSE.

PARUS CÆRULEUS Linnæus, Syst. Nat., ed. x, i, p. 190 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Parus cæruleus cæruleus L., J. L. Bonhote, Bull. B.O.C., xxvii, p. 101; cf. Brit. B., v, p. 109.

DESCRIPTION (Plate 9).—Like British Blue Titmouse but mantle, scapulars, back and rump of a paler and usually greyer shade of green; tips of greater coverts longer and purer white, and those of innermost secondaries less markedly so; yellow of under-parts usually slightly paler and "cleaner." Moults and differences in male and female, juvenile and first winter and summer as in British Blue Titmouse.

Measurements and structure.—♂ wing 64–70 mm., tail 50–57, tarsus 16–18, bill from skull 8–9 (12 measured). ♀ wing 64–69. Wing and tail decidedly longer than in British form; although measurements overlap, adults of Continental form have wings longer and first winter birds of British form have them shorter than 64–65 mm. Primaries and other structure as in British Blue Titmouse.

CHARACTERS AND ALLIED FORMS.—*P. c. ogliastræ* (Corsica, Sardinia) is intermediate between *P. c. cæruleus* and *P. c. obscurus*, *P. c. persicus* (Persia) is considerably paler on upper- and under-parts than *P. c. cæruleus* (other forms from eastern Russia and northern Persia have been separated), *P. c. ultramarinus* (north-west Africa) has dark blue crown and greyish-blue mantle and back, *P. c. degener* (eastern Canaries) is similar but paler, *P. c. teneriffæ* (Teneriffe, Grand Canary) is similar but has no white tips to inner secondaries and greater coverts, *P. c. ombriosus* (Hijero, Canaries) has blue-grey hind-neck, olive-green mantle and back, greenish-grey upper tail-coverts and no white in centre of breast and belly, *P. c. palmensis* (Palma, Canaries) is darker on upper-parts than *teneriffæ* and has narrow white tips to innersecondaries and greater wing-coverts; other forms have been separated but require further study.

BREEDING-HABITS.—Resemble those of the British form. *Eggs*.—Also similar. *Breeding-season*.—In northern Europe from mid-May, but in Germany from the end of April. Two broods frequently reared in central Europe.

FOOD.—Chiefly insects, their eggs and larval forms, also berries and seeds in small quantities.

DISTRIBUTION.—*British Isles*.—One, Peeblesshire (*ut supra*). Immigrations of Blue Tits have been noted, especially in Yorks., where

they appear to arrive in most seasons from mid-Sept. to mid-Nov., and large immigrations were recorded end Oct., 1878 (corresponding with a "rush" at Heligoland), in 1889, and Sept., 1901 (*Birds Yorks.*, 1, pp. 112-113). No specimens of these migrants have, however, been examined and identified as belonging to this form.

DISTRIBUTION.—*Abroad.*—From about lat. north 64° in Sweden and 60° in Russia, throughout continental Europe, but replaced by allied forms in Spain, on some of the Mediterranean islands and Canaries, north-west Africa, Persia, and apparently east Russia.

94. *Parus cæruleus obscurus* Prazak—THE BRITISH BLUE TITMOUSE.

PARUS CÆRULEUS OBSCURUS Prazak, Orn. Jahrb., v, p. 246 (1894—England).

Parus cæruleus Linnaeus, Yarrell, 1, p. 483; Saunders, p. 109; *P. c. obscurus* Prazak, Hartert, Brit. B., 1, p. 213.

DESCRIPTION (Plate 9).—*Adult male. Winter.*—Fore-head, broad stripe over eye joining narrow band at back of crown, white; rest of crown bright glossy blue; hind-neck extending to base of sides of neck dark blue; nuchal spot bluish-white; mantle, scapulars and back green; rump yellowish-green; upper tail-coverts blue; line through lores and extending from eye to blue of nape, black; cheeks, ear-coverts and sides of throat white; centre of chin and upper-throat widening on lower-throat and meeting blue of sides of neck black (most of the feathers tipped white); breast, flanks and under tail-coverts yellow; middle of lower-breast and belly white, with patch of blackish-blue in centre; axillaries pale yellow; tail greyish-blue, central pair and outer webs of rest bright blue, outer pair narrowly fringed white on outer web; primaries and secondaries black-brown, outer webs blue and inner webs narrowly fringed white, 1st and 2nd primaries uniform black-brown, 3rd to 7th with distal emarginated portion of outer webs dull white and basal half bright blue, inner secondaries tinged greenish on outer webs and tipped dull white; primary-coverts blue on outer webs, brown on inner with very narrow whitish tips; greater coverts same with broadish white tips; median and lesser coverts blue. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—No moult. Abrasion makes blue of crown, wings and tail brighter and black of throat more intense, and rather more extensive, white tips of greater wing-coverts become smaller.

Adult female.—Like adult male but not so bright, primary-coverts and outer webs of secondaries more tinged with green, not so bright blue.

Nestling.—Down, greyish-white, rather short and scanty; distribution, inner supra-orbital, occipital and humeral. Mouth inside dull orange-red, no spots; externally flanges pale yellow.

Juvenile. Male.—Fore-head yellow ; stripe over eye white extending backwards in yellow stripe which continues round back of crown ; crown and hind-neck dull greenish-brown ; nuchal spot pale yellow ; rest of upper-parts including upper tail-coverts dull olive-green ; black line through lores and behind eye as in adult ; short stripe under eye white, but rest of cheeks and ear-coverts yellow ; chin and throat yellow with an ill-defined brownish centre becoming at base of sides of neck well-defined narrow greenish-brown line ; whole of rest of under-parts yellow ; tail as adult, but duller and tinged greenish ; primaries and secondaries browner than in adult and outer webs greenish-blue and of inner secondaries green ; primary-coverts bluish-green ; greater coverts grey-brown with yellowish-white tips and narrow blue-green edgings to outer webs ; median and lesser coverts slate-grey. *Female.*—Like above, but tail duller, outer webs of wing-feathers more greenish and innermost secondaries, primary-coverts and greater wing-coverts browner.

First winter and summer. Male and female.—Like adults, but not so bright on crown and outer webs of wing- and tail-feathers (except those newly moulted) and primary-coverts like those of the juvenile. The juvenile body-feathers, greater, median and lesser wing-coverts, two (occasionally three) innermost secondaries and occasionally central pair of tail-feathers are moulted July-Oct., but not primary-coverts or rest of wing- and tail-feathers.

Measurements and structure.—♂ wing 60-65 mm., tail 46-52, tarsus 16.5-18.5, bill from skull 8-8.5 (12 measured). ♀ wing 57-64. Primaries : 1st 6-10 mm. longer than primary-coverts, 2nd between 8th and 9th, 4th and 5th longest, 3rd and 6th 1 mm. shorter, 7th 2-6 shorter, 3rd to 7th emarginated outer webs. Secondaries about equal 10th primary, tips rounded with somewhat pointed apex. Tail almost square. Bill small but strong. Good many rectal and nasal bristles and short bristle-like feathers covering nostrils. Tarsal joint feathered.

Soft parts.—Bill black, tip horn ; legs and feet dark slate-blue ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For allied forms see p. 230. The blue crown, wings and tail distinguish it from other British Tits.

FIELD-CHARACTERS.—Cobalt-blue crown, blue wings and tail, and black line through eye are diagnostic. A characteristic note, heard from early January until summer, is a loud " tsee-tsee-tit-it-it."

BREEDING-HABITS.—Nests in holes of trees and walls, occasionally inside open nests of other species or in foundations of large nests, and in holes of banks and nest-boxes. Where natural sites fail holes of any kind may be used : in letter-boxes, pumps, old cans, etc., and an open nest is said to have been built on a bough. *Nest.*—Foundation built of moss mixed with grass ; lining of hair or wool with feathers ; eggs covered up before incubation by lining. *Eggs.*



(HALF NATURAL SIZE.)

- 1, Continental Blue Titmouse (*Parus c. cæruleus*). 2, British Blue Titmouse (*P. c. obscurus*). 3, Continental Coal-Titmouse (*P. a. ater*). 4, Adult, 5, Juvenile of British Coal-Titmouse (*P. a. britannicus*). 6, Irish Coal-Titmouse (*P. a. hibernicus*). 7, British Marsh-Titmouse (*P. p. dresseri*). 8, British Willow-Titmouse (*P. a. kleinschmidtii*).
[Face p. 232.]

—7-12, but much larger numbers, even up to 24, having been found in one nest, probably two hens sometimes lay together. Colour white, sometimes unmarked, but generally spotted or speckled with a light chestnut, and showing a tendency to a zone. *Breeding-season*.—End of April in south, early May in north. *Incubation*.—Lasts 13-14 days (Evans). Only one brood in British Isles.

FOOD.—Although injurious to ripe apples and pears in autumn, and prone to attack buds in spring, the good done by devouring injurious insects outweighs damage except in special cases. Young fed on larvæ of lepidoptera and aphides. Insects taken include coleoptera, small lepidoptera and larvæ, larvæ of diptera, hymenoptera and larvæ, and hemiptera. Plant lice and scale insects, as well as aphides, are also largely eaten, and also spiders and millipedes. Besides fruit, wheat, beech-mast, chestnuts, birch seeds, maize, and sunflower seeds are also eaten.

DISTRIBUTION.—Confined to British Isles. *England, Wales, and Ireland*.—Resident. Generally distributed. *Scotland*.—Resident. Generally distributed, but becomes rare and very local in north-west, and apparently only occasional Caithness; well distributed most I. Hebrides, but rare Skye, and apparently unknown Eigg; unknown O. Hebrides. Blue Tits (subspecies unknown) have on rare occasions reached Orkneys and Shetlands.

MIGRATIONS.—*British Isles*.—Generally considered subject only to local movements, but movements of small bands to east and south coasts occur in late autumn, and there is evidence of southward passage along east coast (Forth to Suffolk) Oct. and Nov. and indications of return movement April. Migrants also recorded from Little Ross Light (Kirkcudbright.) Oct.

PARUS ATER

95. *Parus ater ater* L.—THE CONTINENTAL COAL-TITMOUSE.

PARUS ATER Linnæus, Syst. Nat., ed. x, i, p. 190 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Parus ater Linnæus, Yarrell, I, p. 489 (part); Saunders, p. 105 (part).

DESCRIPTION (Plate 9).—*Adult and first winter. Male and female*.—Like *P. a. britannicus* but nuchal patch, cheeks and ear-coverts purer white; mantle, scapulars, and back slate-grey, occasionally slightly washed greenish; rump browner buff, not so olive as in *P. a. britannicus*; upper tail-coverts greyer; black of throat in a series rather more extensive; sides, flanks and under tail-coverts duller buff; fringes of tail- and wing-feathers and wing-coverts greyer, not so greenish; tips of greater and median coverts usually purer

white. *Summer*.—Abrasion makes upper-parts, tail, wings, and wing-coverts still greyer and flanks and under tail-coverts still less buff.

Juvenile.—Like that of *P. a. britannicus* but nuchal patch usually white; mantle, scapulars and back greenish-grey; cheeks and ear-coverts paler yellow, sometimes almost white; sooty-brown of throat extending on to upper-breast and wider than in *P. a. britannicus*; rest of under-parts nearly white, only tinged yellow; fringes of tail- and wing-feathers greyer as in adult.

Measurements and structure.—As in *P. a. britannicus*, but slightly larger, except tarsus, which averages smaller. ♂ wing 60–65 mm., tail 44–49, tarsus 16–17, bill from skull 9–10.5. ♀ wing 58–64.

CHARACTERS AND ALLIED FORMS.—For differences of *P. a. britannicus* and *hibernicus* see under those forms. *P. a. vieiræ* (Spain, Portugal) and *P. a. sardus* (Sardinia) are very similar to each other and intermediate between *P. a. ater* and *P. a. britannicus*, *P. a. cypriotes* (Cyprus) is darker on upper-parts than *P. a. britannicus* and white nuchal patch and white sides of neck are smaller and flanks browner, *P. a. atlas* (Marocco) resembles *P. a. sardus* but has greyer flanks, a greenish tinge on crown and round white spots on tips of feathers of lower-throat, *P. a. ledouci* (Tunis, Algeria) has cheeks, ear-coverts, and middle of breast and belly lemon-yellow, *P. a. derjugini* (Armenia) somewhat resembles *P. a. britannicus* but has longer bill, *P. a. michalowskii* (Caucasus) has thicker bill, *P. a. phæonotus* (Persia) is similar but is brown on mantle, *P. a. pekinensis* (north China, Mongolia) and *P. a. æmodius* (Himalayas) have feathers of crown elongated, *P. a. insularis* (Japan) is much like *P. a. ater* but under-parts are cream-coloured.

BREEDING-HABITS.—Like those of British race. Often nests in hole of ground; occasionally in a wall, once recorded from a Sand-Martin's hole. *Eggs*.—Slightly smaller on average than British; average of 105 eggs, 14.7 × 11.6 mm. Markings similar. *Breeding-season*.—From early May in the north, where it is single-brooded.

Food.—Chiefly insects and seeds found in coniferous forests.

DISTRIBUTION.—*British Isles*.—Said to be occasional visitor to east coast England, but we know of only four specimens (two in Mr. J. H. Gurney's coll.), viz.: Northrepps (Norfolk), Jan. 15, 1866; Lakenham, Norwich, spring, 1866 (*cf. Birds Europe*, III, p. 88); and two Thanet (Kent), one spring, 1893, and one Oct. 26, 1913 (*Brit. B.*, VII, p. 262). Two reported seen Parkstone (Dorset), Jan., 1915 (*cf., op. cit.*, XI, p. 237).

DISTRIBUTION.—*Abroad*.—Europe and north Asia, but replaced by allied races in Sardinia, Spain and Portugal, and in Marocco, Algeria, and Tunisia, Cyprus, Crimea, Caucasus, and parts of Asia.

96. *Parus ater britannicus* Sharpe and Dresser—THE BRITISH COAL-TITMOUSE.

PARUS BRITANNICUS Sharpe and Dresser, Ann. & Mag. Nat. Hist., ser. 4, viii, p. 437 (1871—England).

Parus ater Linnæus, Yarrell, I, p. 489 (part); Saunders, p. 105 (part).
P. a. britannicus Sharpe & Dresser, Hartert, Brit. B., I, p. 213.

DESCRIPTION (Plate 9).—*Adult male. Winter.*—Fore-head, lores, and crown glossy black; sides of hind-neck extending on to sides of mantle in broad stripes jet-black; middle of hind-neck extending on to middle of mantle white, forming large nuchal patch; rest of mantle and scapulars and back grey washed olive-buff; rump olive-buff (each feather with concealed whitish patch above olive-buff); upper tail-coverts olive-grey; cheeks from base of lower mandible, ear-coverts and sides of neck white; chin, throat and upper-breast black with white tips to feathers of upper-breast and a few on those of throat; rest of breast and centre of belly white; sides, flanks and under tail-coverts buff; axillaries and under wing-coverts white, tinged buff; tail greyish-black fringed olive-green on outer webs; primaries and secondaries as tail but inner webs fringed white, three innermost secondaries with greyish-brown inner webs and whitish tips; primary-coverts like primaries; greater coverts brown-black fringed olive-grey on outer webs and with white tips to outer webs; median coverts same but tips rounded and covering both webs; lesser coverts brown-black with long olive-grey tips and lower series often with some pale buff at tips. N.B.—Tips of median coverts are often buff or tinged buff, intensity of buff on upper-parts and flanks varies individually. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—No moult. Abrasion of olive-buff fringes of feathers of mantle, scapulars, and back gradually makes these parts purer grey; crown becomes somewhat duller and less glossy; buff of flanks paler; black of upper-breast rather more extensive owing to wearing off of white tips; whitish tips wear completely off innermost secondaries and become much reduced on wing-coverts. N.B.—In much worn plumage some specimens resemble some *winter* specimens of *P. a. ater*.

Adult female. Winter and summer.—Like adult male but black of throat rather narrower and not extending so far on to upper-breast, though this character is not invariable.

Nestling.—Down, smoke-grey: distribution, inner supra-orbital and occipital (fairly long and plentiful), humeral and spinal (more scanty and shorter). Mouth, inside pinkish-orange, no spots; externally flanges pale lemon-yellow.

Juvenile. Male and female.—Fore-head, crown and sides of hind-neck sooty-black; middle of hind-neck as adult but tinged yellow; whole of rest of upper-parts dull brownish-olive; cheeks, ear-coverts and sides of neck pale lemon-yellow; chin sooty-brown;

throat pale yellow, the feathers with sooty bases which show through; breast and belly pale yellow; flanks and under tail-coverts same tinged pale buff; axillaries and under wing-coverts buffish-white; tail, primaries, secondaries and primary-coverts as adult; greater and median coverts as adult but with olive-green fringes and yellowish-white tips; lesser coverts black-brown tinged olive.

First winter. Male and female.—Like adults. The juvenile body-feathers, greater, median and lesser wing-coverts are moulted July-Sept., but not primary-coverts, remiges or rectrices.

Measurements and structure.—♂ wing 59-63 mm., tail 43-47, tarsus 17-18, bill from skull 9-10 (12 measured). ♀ wing 57-62. Primaries: 1st 7-10 mm. longer than primary-coverts, 2nd equal to (or between) 7th or 8th, 4th and 5th longest, 3rd and 6th 1 mm. shorter, 7th 5-7 shorter; 3rd to 6th emarginated outer webs. Secondaries equal 10th primary, tips rounded with somewhat pointed apex. Tail slightly forked, each feather being sloped off at tip of inner web. Bill fairly strong but finer than in Blue Titmouse. Good many rictal and nasal bristles, short bristle-like feathers covering nostrils. Tarsal joint feathered.

Soft parts.—Bill black; legs and feet lead-blue; iris brown.

CHARACTERS.—For allied forms see p. 234. Small size, large white nuchal patch and white tips to wing-coverts distinguish the Coal from other British species of Tit.

FIELD-CHARACTERS.—Differs from other British Tits in having a large pure white patch on nape. Partial to coniferous trees. A characteristic note is "iff-hee, iff-hee, iff-hee."

BREEDING-HABITS.—Nests in a hole either in or close to the ground in old stump, or tree, sometimes in a wall, more often in a bank. Once recorded in an old Thrush's nest, and several times among foundations of large nests in trees. *Nest.*—Built of moss with thick layer of felted hair or down; feathers exceptionally used. *Eggs.*—7 to 11, occasionally 13. Nests with 21 must be used by two hens. Colour white, with reddish-brown spots, sometimes thickly marked in zone, more often finely speckled. Average of 100 eggs, 15×11.6 mm. *Breeding-season.*—Latter part of April in south, early May in midlands and north. *Incubation.*—Period not exactly known, probably 12 days, chiefly at any rate by hen. Single-brooded.

FOOD.—Mainly insects (coleoptera and larvæ, imagines and larvæ of diptera, larvæ and eggs of lepidoptera and hymenoptera); also spiders, American blight and mussel scale. Seeds are also sometimes eaten, and like other Tits it will feed on meat and fat. Also kernels of nuts, beech-mast and seeds of conifers.

DISTRIBUTION.—Confined to Great Britain. *England and Wales.*—

Resident. Generally distributed, more especially in wooded parts. *Scotland*.—Resident. Generally distributed, except Caithness, where very rarely observed,* and in Shetlands, Orkneys, and O. Hebrides, where unknown.

MIGRATIONS.—*British Isles*.—Generally considered as subject to local movements only, but has been observed on autumn-migration at Isle of May and Bass Rock.

97. *Parus ater hibernicus* Ogilvie-Grant—THE IRISH COAL-TITMOUSE.

PARUS HIBERNICUS Ogilvie-Grant, Bull. B.O.C., xxvii, p. 37 (31.xii.1910—Ireland).

Parus hibernicus, Daily Mail (!) No. 4593, p. 3 (28.xii.1910—County Sligo, Ireland. Author not clearly stated, either "Natural History authorities," Louis Wain, or Sir William Ingram).

DESCRIPTION (Plate 9).—*Adult winter and first winter. Male and female*.—Like British Coal-Titmouse but nuchal patch tinged yellow; mantle, scapulars and back more strongly washed olive-buff; cheeks, ear-coverts, sides of neck, centre of breast and belly pale yellow or yellowish-white, not pure white; flanks and under tail-coverts yellowish-buff. *Summer*.—Olive-buff wash on mantle wears away considerably, but mantle does not become so grey as in worn specimens of *P. a. britannicus*, yellow of cheeks, ear-coverts, breast and belly becomes paler and more whitish than in winter. N.B.—Occasional specimens especially from north-east Ireland even in winter are indistinguishable from *P. a. britannicus*, while others have only a faint tinge of yellow on ear-coverts or belly.

Juvenile.—Exactly like that of *P. a. britannicus*.

Measurements and structure.—As in *P. a. britannicus*, but averaging perhaps a shade smaller. ♂ wing 57-61 mm., tail 41-45, tarsus 16.5-18, bill from skull 9-10. ♀ wing 56-60.

BREEDING-HABITS.—Similar to those of British form, except that the nest is often found in a hole in a stone-faced bank (Ussher).

FOOD.—Probably similar to that of British form. Ussher says it feeds on alders and attacks cone of *Picea nobilis*; Warren records oats.

DISTRIBUTION.—Confined to *Ireland*. Resident, and generally distributed, more especially in wooded districts.†

* Records from Wick (Caithness) in autumn may be referable to *Parus a. ater*.

† Some examples, especially from co. Down, are not separable from *Parus a. britannicus*.

PARUS CRISTATUS

98. *Parus cristatus scoticus* (Prazak)—THE SCOTTISH CRESTED TITMOUSE.

LOPHOPHANES CRISTATUS SCOTICA Prazak, Journ. f. Orn., p. 347 (1897—Scotland).

Parus cristatus Linnæus, Yarrell, I, p. 499; Saunders, p. 111; *P. c. scotica* (Prazak), Hartert, Brit. B., I, p. 215.



Adult.



Juvenile.

The Scottish Crested Titmouse (*Parus c. scoticus*).

DESCRIPTION.—*Adult male and female. Winter and summer.*—Mantle, scapulars and back considerably darker brown than in *P. c. cristatus*; rump and upper tail-coverts also darker, as well as edgings of wing- and tail-feathers and wing-coverts; white tips of feathers of crown and crest duller; white of under-parts duller; flanks, vent and under tail-coverts darker and browner, not so buff.

Nestling.—(Not examined.)

Juvenile.—Differs from adult in same way as juvenile *P. c. cristatus*, but upper-parts more sooty-brown than adult and considerably more so than in juvenile *P. c. cristatus*.

Measurements.—♂ wing 61-65 mm., tail 46-50, tarsus 18-19, bill from skull 9-11 (12 measured). ♀ wing 58-65. Structure as in *P. c. cristatus*.

CHARACTERS AND ALLIED FORMS.—For differences of *P. c. cristatus* and *P. c. mitratus* see under those forms; birds from Spain and Portugal require further study. Black and white pointed crest distinguishes the species.

FIELD-CHARACTERS.—Pointed black-and-white banded crest prevents confusion with any other British Tit, and a clear trilling “tiritrl” is equally diagnostic.

BREEDING-HABITS.—Nests in holes or crevices of old pine stumps, also in alders and birches and sometimes in fencing posts, iron and wooden. Once recorded in Hooded Crow's nest. *Nest.*—Dead moss lined with hair of deer and hare, sometimes feathers or wool. *Eggs.*—Usually 5 or 6; rarely 7 or 8; white with handsome zone of rich chestnut-red spots and blotches, only rarely faintly marked. Average of 46 eggs, 16.1×12.5 mm. *Breeding-season.*—End of April or early May; occasionally mid-April. *Incubation.*—No data. Probably one brood only.

FOOD.—Insects and larvæ; also small seeds and berries (juniper, etc.). Young fed on insects (larvæ of lepidoptera, aphides, etc.).

DISTRIBUTION.—Confined to *Scotland*. In Spey Valley, resident over whole area of pine-tracts in Abernethy, Rothiemurchus and Dulnan, from base of Cairngorms to Ballindalloch. In recent years found breeding in several localities in Findhorn Valley and several times seen and probably breeding in several localities in east Ross-shire. Vagrants, possibly of this form, have occurred Argyll, Perth, and Dumbarton.

99. *Parus cristatus cristatus* L. — THE NORTHERN CRESTED TITMOUSE.

PARUS CRISTATUS Linnæus, Syst. Nat., ed. x, i, p. 189 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Parus cristatus cristatus L., Witherby, Brit. B., v, pp. 109-10.

DESCRIPTION.—*Adult male. Winter.*—Feathers of fore-head and crown black fringed white, those of back of crown much elongated and pointed, forming prominent crest (longest feather from base to tip 16-20 mm.); mantle, scapulars and back brown with greyish tinge of varying strength; rump and upper tail-coverts more buffish-brown; lores and ear-coverts white slightly mottled black; line behind eye and extending to hind-part of ear-coverts black; sides of chin, throat and neck white; centre of chin and throat black broadening at base of throat and extending as a black line encircling base of neck to nape; breast and belly white; flanks, vent and under tail-coverts varying from greyish-buff to warm brown-buff; under wing-coverts and axillaries white; tail-feathers grey-brown with fringes of outer webs like upper tail-coverts; primaries dark grey-brown fringed on inner webs white and on outer webs very narrowly dull greyish-white; secondaries same but with fringes of outer webs browner; primary-coverts dark brown fringed greyish-brown; rest of wing-coverts much as mantle but rather greyer. This plumage is acquired by complete moult in Aug.-Oct. *Summer.*—No moult. By abrasion of their tips feathers of crown become blacker and of crest shorter, wear also makes wings and tail browner and flanks less buff.

Adult female.—Like male. Feathers of crest slightly shorter on average, but measurements overlap, and sexes cannot be distinguished by this character. (Longest feather from base to tip 15-19 mm.)

Nestling.—(Not examined.)

Juvenile.—Closely resembling adult but feathers of crown brown-black and tips duller white, feathers of crest shorter and not so pointed; black of chin and throat brownish and some feathers tipped white, black of base of throat not extending on to sides of neck, and no encircling black line at base of sides of neck.

First winter and summer. Male and female.—Like adults. The juvenile body-feathers, greater, median, lesser wing-coverts, and innermost secondaries are moulted Aug.-Sept., but not primary-coverts, rest of wing-feathers or tail.

Measurements and structure.—♂ wing 62-67 mm., tail 49-54, tarsus 17.5-19, bill from skull 9-11 (12 measured). ♀ wing 59-65. Primaries: 1st 9-14 mm. longer than primary-coverts, 2nd equal to (or between) 8th or 9th, 4th and 5th longest, 3rd 2-3 shorter, 6th 1 shorter, 7th 3-5 shorter; 3rd to 6th clearly, and 7th less clearly, emarginated outer webs. Secondaries equal 10th primary, tips round with somewhat pointed apex. Tail slightly forked, each feather being sloped off at tip of inner web. Bill fairly strong. Good many rictal and nasal bristles, short bristle-like feathers covering nostrils. Tarsal joint feathered.

Soft parts.—Bill black; legs and feet olive-grey; iris red-brown.

BREEDING-HABITS.—Similar to those of British form. Occasionally nests in old squirrels' dreys. Eggs also similar.

FOOD.—Chiefly insects, their eggs and larvæ; only to small extent seeds.

DISTRIBUTION.—*England*.—One, Whitby (Yorks.), March, 1872 (*ut supra*).

[Other examples (not examined) of Crested Tits, recorded as obtained, are: Thirsk (Yorks.), near Christchurch (Hants.), 1846, Grange, Melton (Suffolk), about 1873, Suffolk, about 1840. Others are recorded as seen.]

DISTRIBUTION.—*Abroad*.—Scandinavia, north Russia, Poland, and east Germany. Replaced in west Germany, central and west Europe by *Parus cristatus mitratus*.

100. *Parus cristatus mitratus* Brehm—CENTRAL EUROPEAN CRESTED TITMOUSE.

PARUS MITRATUS Brehm, Handb. Naturg. Vög. Deutschl., p. 467 (1831—Germany).

Parus cristatus mitratus Brehm, Witherby, Brit. B., v, p. 110.

DESCRIPTION.—*Adult male and female. Winter.*—Like *P. c. cristatus* and moults same, but white tips of crown and crest usually tinged buff; rest of upper-parts, including edgings of tail- and wing-feathers and wing-coverts, considerably warmer buff-brown with no greyish tinge; sides of head, breast and belly tinged buff, not so pure white; flanks, vent and under tail-coverts considerably deeper brown-buff than in *P. c. cristatus*. *Summer.*—In much worn plumage differences are not so well marked, and some specimens are very difficult to distinguish.

Nestling.—(Not examined.)

Juvenile.—Like that of *P. c. cristatus* and often very difficult to distinguish, but edgings of wing- and tail-feathers more buff-brown, upper-parts usually of a warmer tint, and flanks usually more buff.

Measurements and structure.—♂ wing 61-70 mm., tail 49-51, tarsus 17.5-20, bill from skull 9.5-10.5, longest crest-feather from base to tip 17-22 (12 measured). ♀ wing 61-64, longest crest-feather 15-20. Structure as in *P. c. cristatus*.

Soft parts.—As in *P. c. cristatus*.

BREEDING-HABITS.—Usually nests in holes of stumps, but also at times in nests of birds of prey, Woodpeckers' borings, Kingfishers' burrows, etc. *Eggs.*—Also similar; 5 to 8 as a rule, but 10 and even 12 are said to have been found together. *Breeding-season.*—From mid-April onward to June. Two broods.

FOOD.—Similar to that of preceding forms.

DISTRIBUTION.—*England.*—One. Yarmouth (Isle of Wight) previous to 1844 (*ut supra*).

DISTRIBUTION.—*Abroad.*—Breeds in central Europe, south to Pyrenees and Alps. In Italy south of Alps only from autumn to spring. Represented in north and north-east Europe, and apparently in Spain and Portugal, by closely allied forms.

PARUS PALUSTRIS

101. *Parus palustris dresseri* Stejn. — THE BRITISH MARSH-TITMOUSE.

PARUS PALUSTRIS DRESSERI Stejneger, Proc. U.S. Nat. Mus., ix, p. 200 (1886—England).

Parus palustris Linnæus, Yarrell, i, p. 495; Saunders, p. 107; *P. p. dresseri* Stejn., Hartert, Brit. B., i, p. 214.

DESCRIPTION (Plate 9).—*Adult male and female. Winter.*—Fore-head, crown, nape, and extending on to mantle, glossy jet-black; rest of mantle, scapulars, back, rump, and upper tail-coverts warm brown (each feather of rump with concealed pale buff

patch above brown tip); lores and behind eye black; cheeks and ear-coverts white; sides of neck extending on to sides of hind-neck brownish-white; chin and centre of throat black, each feather tipped white; breast and belly dull white tinged brownish-buff; flanks and under tail-coverts pale brownish-buff; axillaries and under wing-coverts white tinged brownish-buff; tail-feathers black-brown, outer webs edged olive-brown with a very narrow whitish outer line on outer pair; primaries and secondaries black-brown, narrowly edged brown as mantle on outer webs, and white on inner webs; innermost secondaries pale brown; primary-coverts dark brown edged paler; greater, median and lesser wing-coverts brown. This plumage is acquired by complete moult in July-Sept. *Summer*.—No moult. Abrasion has little effect, but some white tips wearing off feathers of throat makes this rather more black, brown of upper-parts becomes rather darker and less warm in tint.

Nestling.—Down brownish-grey, short and scanty. Distribution inner supra-orbital, occipital, humeral and spinal. Mouth, inside brownish-yellow, no tongue-spots; externally flanges pale yellow.

Juvenile.—Like adult but whole crown dull sooty-black; rest of upper-parts tinged greyish not so warm brown as adult; black of chin and throat more brownish; breast and belly whiter; flanks and under tail-coverts paler with only a buffish tinge.

First winter.—Like adult. The juvenile body-plumage, greater, median and lesser wing-coverts are moulted in Aug.-Sept., but not primary-coverts, wing- or tail-feathers.

Measurements and structure.—♂ wing 59-65 mm., tail 49-54 (outer tail-feather 2-4 (rarely 5) mm. shorter than longest), tarsus 15.5-17, bill from skull 9-10.5. ♀ wing 59-62. Primaries: 1st 8-11 mm. longer than primary-coverts, 2nd equal to (or between) 9th or 10th, 4th and 5th longest, 6th sometimes as long, sometimes 1 shorter, 3rd and 7th 2-4 shorter; 3rd to 7th emarginated outer webs. Secondaries equal 10th primary, tips rounded with somewhat pointed apex. Tail slightly forked, inner web of each feather being sloped off at tip. Bill strong, good many rictal and nasal bristles, short bristle-like feathers covering nostrils. Tarsal joint feathered.

Soft parts.—Bill black; legs and feet blue-grey; iris dark brown.

CHARACTERS AND ALLIED FORMS.—All forms are very close and require careful comparison. *P. p. palustris* (Scandinavia, east Prussia) is larger and brown of upper-parts is considerably greyer in tint, *P. p. stagnatilis* (south-east Europe) is much like last but not quite so grey, *P. p. communis* (Germany, Austria) is of a more buffish-brown, *P. p. longirostris* (France, Belgium, Holland) is more olive and not so rusty as *P. p. dresseri*, *P. p. italicus* (Italy) is of a

paler rusty-brown on mantle ; other forms occur in Asia. Black crown and nape without nuchal spot, and uniform (not pale tipped) wing-coverts distinguish it from other British Tits except Willow-Tit, for differences of which see pp. 243-4.

FIELD-CHARACTERS.—Readily distinguished from Coal-Tit by absence of white patch on nape. Closely resembles Willow-Tit, but has glossy blue-black, not dull sooty-black, crown. Song, see *Brit. Birds*, iv, p. 147 (F.C.R.J.).

BREEDING-HABITS.—Usually nests in natural holes of willows, alders, etc., sometimes slightly enlarging or altering opening ; occasionally breeds in nesting-boxes. *Nest.*—Foundation of moss, varying in amount according to size of hole, with thick pad of felted hair, rabbit's fur or down. *Eggs.*—7 or 8 as a rule, occasionally more ; white, rather sparsely spotted with red-brown. Average of 57 eggs, 15.6×12.2 mm. *Breeding-season.*—From about the last week in April in the south of England. *Incubation.*—Lasts about 13 days ; apparently by hen. Probably sometimes double-brooded.

FOOD.—Chiefly insects (coleoptera, hymenoptera, etc., and their larvæ) ; also seeds of weeds, beech-mast, berries and sunflower seeds. (Many records may refer to Willow-Tit.)

DISTRIBUTION.—Confined to Great Britain. *England and Wales.*—Resident. Rather local and especially so in west Cornwall, Cumberland and Westmorland. In northern parts of north Wales probably only accidental, and in Anglesey unknown. It may be replaced entirely by the Willow-Tit in some parts, and especially in the north. *Scotland.*—Appears to be entirely replaced by the Willow-Tit. *Ireland.*—Said to have occurred many years ago in counties Antrim, Kildare, Dublin, and Louth, but no specimens exist. Has been introduced Tipperary (*Brit. B.*, v, p. 229).

Represented by more or less closely allied forms on the continent of Europe and in north Asia as far east as Japan. In Europe apparently absent from Greece.

PARUS ATRICAPILLUS

102. *Parus atricapillus kleinschmidti* Hellm.—THE BRITISH WILLOW-TITMOUSE.

PARUS MONTANUS KLEINSCHMIDTI Hellmayr, Orn. Jahrb., xi, p. 212 (1900—England. Coalfall Wood, near Finchley).

Parus atricapillus kleinschmidti Hellm., Rothschild, Brit. B., i, p. 44 ; Hartert, *l.c.*, p. 214.

DESCRIPTION (Plate 9).—*Adult male and female. Winter and summer.*—Like adult British Marsh-Titmouse, but whole crown

always dull black not glossy; sides of neck usually more buff (sometimes pinkish-buff); flanks and under tail-coverts varying in shade but always deeper buff (sometimes pinkish-buff) and usually this is a very clearly marked difference; outer edgings to secondaries and greater wing-coverts usually much more buffish than in *P. p. dresseri*; outer tail-feathers usually shorter in proportion to other tail-feathers than in *P. p. dresseri* (see under measurements). Moults apparently as in *P. p. dresseri*.

Juvenile.—Like that of *P. p. dresseri* and impossible to distinguish except when buff edgings to secondaries and shortness of outer tail-feathers are well marked; occasionally flanks are buffer than in juvenile *P. p. dresseri*.

Measurements and structure.—♂ wing 56-62 mm., tail 47-52 (outer tail-feather 5-6 mm. shorter than longest), tarsus 16-17, bill from skull 10-11 (12 measured). ♀ wing 56-61. Wing-formula and other structure as in *P. palustris dresseri*.

Soft parts.—As in *P. palustris dresseri*.

CHARACTERS AND ALLIED FORMS.—*P. a. salicarius* (middle Germany, Austria) has longer wing and paler brown mantle, *P. a. rhenanus* (west Germany, Holland, Belgium, France) is intermediate in colour and length of wing between the last and *P. a. kleinschmidtii*, *P. a. montanus* (Alps) is more like *P. a. borealis* (see p. 245) but larger and slightly darker on mantle, *P. a. assimilis* (mountains south-east Europe) is much like *P. a. borealis* but with a finer bill and more buff flanks; other forms are found in Asia, and *P. a. atricapillus* and other forms in North America. All forms of the species are distinguished from all forms of *P. palustris* by dull black, instead of glossy black, crown.

FIELD-CHARACTERS.—Only distinguishable in field from Marsh-Tit, by dull sooty crown, and light buff edges to secondaries, which form a fairly defined light line on wing. Characteristic note a penetrating "tchay, tchay, tchay" (F.C.R.J.).

BREEDING-HABITS.—Excavates a spherical chamber in soft rotten wood, often of willows or alders, with an entrance hole leading into it, made by the birds. *Nest*.—A thin pad of down mixed with wood-fibre, but no moss, and far less bulky as a rule than that of the Marsh-Tit. *Eggs*.—6 to 9, white, spotted, in some cases sparingly, but richly in others, with dark or light brown-red, often forming a zone. Average of 17 eggs, 15.2×12.4 mm. *Breeding-season*.—Early May in England, about a week later in Scotland. *Incubation*.—Probably about 13 days; details lacking. Apparently one brood.

FOOD.—Probably very similar to that of Marsh-Tit, but records not distinguished.

DISTRIBUTION.—Apparently confined to *Great Britain*. Distribution

as yet not well known, and in *England* and *Wales* we can only give counties where it has been identified, and in which it is present in small numbers with *Parus palustris dresseri*, viz.: Devon, Wilts., Dorset, Hants., Sussex, Kent, Surrey, Berks., Oxon., Bucks., Herts., Middlesex, Essex, Cambs., Suffolk, Norfolk, Northants., Hunts., Lincs., Yorks., Northumberland, Lancs., Cheshire, Derby, Salop, Staffs., Warwick, Worcester, Hereford, Brecon, Merioneth, Carnarvon. *Scotland*.—Seems entirely to replace *P. p. dresseri*, but specimens have only been critically examined from Forth and Moray areas, Dumfries, Kirkcudbright, Renfrew, and Lanark (cf. *Brit. B.*, iv, pp. 159, 284; v, pp. 133, 256). Very local, but fairly well distributed south of a line from Firth of Forth to Firth of Clyde, reaching to Loch Lomond and into Stirling and Perth in small numbers and very locally to a little north of Perth (town), with isolated record as far as Dunkeld. Also breeds in parts of Spey valley, but otherwise unknown in north, except for a few isolated records elsewhere in Moray area. Unknown I. and O. Hebrides, Shetlands and Orkneys.

103. *Parus atricapillus borealis* Selys.—THE NORTHERN WILLOW-TITMOUSE.

PARUS BOREALIS Selys-Longchamps, Bull. Ac. Bruxelles, x, 2, p. 28 (1843—Iceland—errore! The type came from Norway).

Parus borealis (Selys-Longch.), Grant, Bull. B.O.C., xxiii, p. 34; *id.*, *Brit. B.*, II, p. 277.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Easily distinguished from *P. a. kleinschmidti* by its pale grey-brown mantle, scapulars, back and rump; pure white cheeks, ear-coverts and sides of neck; pure white centre of breast and belly; paler buff flanks and under tail-coverts; edgings of outer webs of tail-feathers, primaries and secondaries greyish-white or pale cream-colour; innermost secondaries and wing-coverts grey-brown, the greater coverts edged paler. Larger size. Moults as in *P. palustris dresseri*.

Nestling.—(Not examined.)

Juvenile.—Like adult but crown and chin sooty-brown-black.

Measurements and structure.—♂ wing 62-68 mm., tail 55-60 (outer tail-feather 5-8 mm. shorter than longest), tarsus 17-18, bill from skull 10-11 (12 measured). ♀ wing 61-65. Wing-formula and other structure as in *P. palustris dresseri*.

Soft parts.—As in *P. palustris dresseri*.

FIELD-CHARACTERS.—In Norway frequents both fir and birch forests. Readily distinguished from Marsh-Tit and British Willow-Tit by larger size, whiter cheeks, greyer back and greyish-white edgings to secondaries. Its note is a loud and harsh "tchay"

repeated several times, and at a distance sounds somewhat like that of a Jay (H.F.W.).

BREEDING-HABITS.—Bores a hole for itself like the British form, and makes a scanty nest of juniper bark and willow-fibre, but does not use moss, hair or feathers. *Eggs.*—Usually 7 or 8, occasionally reported up to 12; white, spotted with red-brown. Average of 49 eggs, 15.2×12.1 mm. *Breeding-season.*—About mid-May in south Scandinavia and a week later in the north. *Incubation.*—Probably similar to that of British race.

FOOD.—Similar to that of other forms.

DISTRIBUTION.—*England.*—One, Tetbury (Gloucester), March, 1907. Also thought to have been seen at Welwyn (Herts.), Jan. 12, 1908 (*ut supra*).

DISTRIBUTION.—*Abroad.*—Scandinavia, north and north-west Russia, Russian Baltic provinces, and east Prussia. In winter, vagrant and appearing elsewhere (Poland, Orenburg, etc.). Replaced by other races in central Europe and north Asia, as well as in North America.

Genus *ÆGITHALOS* Herm.

ÆGITHALOS Hermann, Obs. Zool., p. 214 (1804—Monotype: "*Æ. europæa*").

Bill short and thick, much less than half as long as head, upper and lower mandible strongly curved. Wing short, rounded, 1st primary less than half as long as 2nd, 4th and 5th longest, 6th longer than 3rd. Tail much longer than wing, much graduated and emarginated, rectrices rather narrow. Tarsus rather slenderer than in *Parus*; scutes in front of tarsus inclined to fuse into a single long lamina. Hind toe stouter than the others, and with a stronger and longer claw. Plumage very copious and soft. Sexes not conspicuously different. Nidification different from that of *Parus*: nest a roundish or oblong, bulky, well-woven structure of moss, lichen, spider's webs, etc., with small lateral entrance-hole. Eggs finely spotted. One species with at least fifteen subspecies. Palearctic region from Ireland and Portugal to Japan, in Europe south to Mediterranean, in the east to tropical China.

ÆGITHALOS *CAUDATUS*

104. *Ægithalos caudatus caudatus* (L.)—THE NORTHERN LONG-TAILED TITMOUSE.

PARUS CAUDATUS Linnaeus, Syst. Nat., ed. x, i, p. 190 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Acredula caudata (Linnaeus), Yarrell, I, p. 504 (part); Saunders, p. 101 (part).

DESCRIPTION (Plate 10).—*Adult male and female*.—Like *Æ. c. roseus* but whole crown, nape, ear-coverts, and sides of neck pure white; tips of feathers of scapulars and rump whiter than in *Æ. c. roseus*; chin, throat and breast pure white with no dark tips to feathers of upper-breast; pink of flanks more mixed with white than in *Æ. c. roseus*; innermost secondaries with more white, outer webs being mostly white, and in two innermost usually whole feather except brown centre is white; inner greater coverts with purer and longer white tips. Moults as in *Æ. c. roseus*.

Nestling.—(Not examined.)

Juvenile.—Like that of *Æ. c. roseus* but rather paler chocolate-brown on upper-parts.

Measurements and structure.—♂ wing 64-67 mm., tail 88-100, tarsus 16-17.5, bill from skull 7-8 (12 measured). ♀ wing 63-67, tail 87-99. Structure as in *Æ. c. roseus*.

Soft parts.—As in *Æ. c. roseus* but eyelid and orbital ring yellow.

CHARACTERS AND ALLIED FORMS.—*Æ. c. europæus* (western and south middle Europe) is somewhat larger than *Æ. c. roseus* (♂ wing 61-67 mm., tail 84-93) and intermediate in colour between that form and *Æ. c. caudatus*, sides of crown are variable, sometimes with scarcely any dark markings, occasionally almost as black, but not so broad, as in *Æ. c. roseus*, usually brownish and narrow, white on inner secondaries also variable, sides of neck with less dark streaks than in *Æ. c. roseus*, under-parts whiter than in *Æ. c. roseus* but not so pure white as in *Æ. c. caudatus*, *Æ. c. pyrenaicus* (Pyrenees) is like *Æ. c. roseus*, but with stripes on sides of crown much wider, *Æ. c. irbii* (Spain) has grey mantle and back, *Æ. c. taiti* (Portugal) is similar but much darker, *Æ. c. italica* (Italy) differs from *Æ. c. irbii* by its black upper back, scapulars pinkish, *Æ. c. sicula* (Sicily) is like *Æ. c. irbii* but has stripes on sides of crown pale brown and a good deal of brown in centre of crown, *Æ. c. tyrrhenicus* (Corsica) has scapulars as in *Æ. c. irbii*, but upper back as in *Æ. c. italica*, *Æ. c. macedonica* (Greece) has stripes on each side of crown extending to base of bill, *Æ. c. major* (Caucasus) is similar to *sicula* but larger, *Æ. c. tephronotus* (Asia Minor) and other forms in Asia have a blackish spot in centre of throat.

BREEDING-HABITS.—Similar to those of British form. *Eggs*.—9 to 12 in first layings, but higher numbers occasionally recorded; variable, some being freely marked with light red, and others almost unmarked. Average of 47 eggs, 14.2×10.8 mm. *Breeding-season*.—From end April to May in Scandinavia.

FOOD.—Chiefly larvæ and eggs of insects (lepidoptera, coleoptera, orthoptera, etc.); also spiders.

DISTRIBUTION.—*England*.—One found dead Tynemouth (Northumberland) Nov., 1852 (Hancock, *Birds North. & Durham*, p. 77).

One said to have been obtained at Dover (Kent) prior to 1889, is at Rochester (*Hist. Birds Kent*, p. 76). Pair seen probably of this race, Bradfield (Essex), Mar. 22, 1912 (W. B. Nichols, *Brit. B.*, v, p. 328). Four seen Uist (Shetlands) April, 1860, may have been this form. Others recorded as seen and M. A. Mathew (*B. of Devon*, p. 34), says he received one shot near Cambridge.

DISTRIBUTION.—*Abroad.*—North and east Europe to Siberia and north Japan (Yesso); in winter vagrant and appearing in central and west Europe. Replaced in central and south Europe, Asia Minor, Caucasus, Crimea, Persia, China and south Japan by other races.

105. *Ægithalos caudatus roseus* (Blyth)—THE BRITISH LONG-TAILED TITMOUSE.

Mecistura rosea Blyth, in Gilb. White, *Nat. Hist. Selborne*, p. 111 (1836—England).

Mecistura vagans Leach, *Cat. Mamm. Birds Brit. Mus.*, p. 17 (1816—No description).

Mecistura longicauda MacGillivray, *Hist. Brit. B.*, II, p. 454 (part).

Acredula caudata (Linnaeus), Yarrell, I, p. 504 (part); Saunders, p. 101 (part); *A. c. rosea* (Blyth), Hartert, *Brit. B.*, I, p. 217.

DESCRIPTION (Plate 10).—*Adult male and female.* *Winter.*—Fore-head, centre of crown and nape white, marked here and there brown or brown-black; on each side of crown and nape broad black line extending from front of eye (occasionally from base of bill) to mantle; upper-mantle black; rest of mantle and back black mixed with varying amount of pink; scapulars and rump mostly pink with some black markings and tips of feathers whitish; upper tail-coverts black; lores, chin, and throat dull white; ear-coverts and sides of neck whitish, streaked brown; upper-breast with an indistinct band formed by small dark brown tips to some of the feathers; centre of breast and belly pinkish-white; sides, flanks, and under tail-coverts pink, feathers tipped white; axillaries and under tail-coverts white; tail black, two outer pairs with outer webs and large wedge-shaped mark at tip of inner web white, next pair same but only distal half of outer web white; primaries brown-black, inner webs fringed white; secondaries same but outer webs also fringed white or buffish-white narrowly on outer feathers, broadly on four innermost ones, which are paler and browner than others; primary-, median and lesser coverts black; outer greater coverts same but inner ones brown, tipped white and margined pink and white. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—No moult. Abrasion of white tips of feathers makes pink of upper-parts and flanks somewhat darker.

Nestling.—Down absent; mouth inside and gape externally yellow (J. H. Owen).

Juvenile.—Fore-head, lores, ear-coverts, sides of neck, sides

of crown and nape, mantle, back, rump and upper tail-coverts dark chocolate-brown; centre of crown extending just on to nape white marked here and there brown; scapulars with distal half whitish, tinged pink; chin, throat, breast and belly white; some feathers of upper-breast tinged brown; flanks tinged buffish; vent pink; under tail-coverts same but marked here and there blackish; axillaries and under wing-coverts white; tail black, outer webs of two outer pairs white, tinged brownish (no wedge at tip of inner web as in adult), next pair with only faint whitish markings on distal part of outer web; wing-feathers as adult, but browner, not so black, and inner secondaries with narrower white edgings; wing-coverts dark brown, inner greater coverts with narrow buffish-white tips and margins.

First winter.—Like adults. The juvenile plumage is completely (including wings and tail) moulted in Aug.-Sept.

Measurements and structure.—♂ wing 58-63 mm., tail 80-92, tarsus 16-17.5, bill from skull 6-7 (12 measured). ♀ wing 58-61, tail 72-87. Primaries: 1st 8-10 mm. longer than primary-coverts (in juvenile 11-12 longer) 2nd equal to (or between) 9th or 10th, 4th and 5th longest, 6th 1-2 shorter, 3rd and 7th 2-5 shorter; 3rd to 6th emarginated outer webs. Secondaries about equal 10th primary, tips rounded. Tail graduated, central pair about 5 mm. shorter than next pair which is longest, 3rd pair same length as central pair, 4th pair about 10 mm. shorter, 5th pair about 10 shorter than 4th, outer pair 20 or more shorter than 5th, and 40-50 shorter than longest. Tarsal joint feathered. Bill short but fairly strong, culmen curved. Bristle-like feathers covering nostrils. Body feathers long and loose in structure.

Soft parts.—Bill black (juv. black with yellowish base and tip); legs and feet black-brown (juv. dull flesh); iris dark hazel; eyelids and orbital ring pink (occasionally brownish-yellow).

CHARACTERS AND ALLIED FORMS.—For allied forms see p. 247. The long graduated tail, white centre of crown, and pink colouring of scapulars, back and flanks distinguish it from all other British species.

FIELD-CHARACTERS.—Delicate pink and grey tints and inordinately long tail render this tiny bird unmistakable. Associates much with other Tits, but is often seen in exclusive bands. White lateral feathers in black tail are conspicuous as the birds pass with weak flight from one tree to another. Call-note, a feeble "tsee, tsee" which resembles that of other Tits, is often punctuated by a low "tchup," which is very distinctive.

BREEDING-HABITS.—Builds a large upright ovoid-shaped nest, with entrance hole near top, usually in thorn bushes, furze or brambles, but sometimes also in orchard trees, conifers, oaks, birches, sometimes at considerable heights. Materials used are chiefly moss (*hypnum*)

woven together with cobwebs and a little hair, externally covered with lichens and lined with a great profusion of feathers of various kinds, sometimes over 2,000 in number. *Eggs*.—8 to 12, but instances are on record where up to 20 have been found in one nest, probably due to the presence of more than one female. Markings rather variable, sometimes almost obsolete, at other times a zone or cap of spots or freely speckled with light reddish. Average of 100 eggs, 14.2×11 mm. *Breeding-season*.—The nest is built in March, but the full clutch is generally ready about mid-April in south England, or late April in the north. *Incubation*.—Probably about 12 days, chiefly by hen, but both sexes roost in nest. Two broods sometimes at any rate.

Food.—Chiefly insects, their larvæ and eggs (coleoptera, especially weevils, small lepidoptera, especially the *Tineinæ*, hymenoptera, scale insects), occasionally centipedes, seeds, fragments of buds, and frequently spiders.

DISTRIBUTION.—*British Isles*.—Resident. Generally distributed in most parts, but rare in some very barren districts and in Isle of Man; only once O. Hebrides ("company" Lewis, 1903), never Orkneys, only once (four seen April, 1860) Shetlands may have been *Æ. c. caudatus*, very rare Caithness and extreme north-west Scotland, but common, if somewhat local, in other parts. (Almost exterminated in many parts by severe winter of 1916–17, is now gradually recovering its numbers.)

Genus *REGULUS* Vieill.

REGULUS Cuvier, *Leçons d'Anat. Comp.* I, tab. II (1800—Type by tautonymy and monotypic: "*Le Roitelet*" = *Motacilla Regulus* L. apud Cuvier, *Tabl. Elém. d'Hist. Nat.*, p. 220, 1798. Cf. *Opinion Nomencl.* 39).

The "Goldcrests" differ in many ways from other *Paridæ* and are considered by some ornithologists even worthy of family rank, being separated as "*Regulidæ*." They are all of very small size, the bill is thin and slender, with an almost straight culmen. Nostrils near base of bill, small, with an operculum, being partially covered by one single somewhat stiff plume, only *R. calendula* of North America having several bristles. Rictal bristles soft. Wings fairly long, rounded at tip; 1st primary one-third or half as long as 2nd; in all Palæarctic forms at least 4th to 6th primaries longest. Tail very slightly emarginated, the rectrices pointed at tip. Tarsus long and slender, about one-third as long as wing, much longer than middle toe with claw, front "booted." Crown of adults with brilliant coloration, except in ♀ of *R. calendula*, generally

different in sexes, of young uniform. Nest a more or less pensile structure attached to small twigs, mostly in coniferous trees, open above. Eggs without gloss, yellowish or pinkish-buff with fine markings. Four species in not less than twenty subspecies. Nearctic and Palearctic regions, in Asia south to mountains of tropical China and Formosa.

Key to species of genus REGULUS.

Sides of neck with large olive-yellow patch, white superciliary line.	<i>R. ignicapillus</i> , p. 254
Sides of neck without olive-yellow patch, no white superciliary line.	<i>R. regulus</i> , p. 251

REGULUS REGULUS

106. *Regulus regulus regulus* (L.)—THE CONTINENTAL GOLDEN-CRESTED WREN.

MOTACILLA REGULUS Linnaeus, Syst. Nat., ed. x, i, p. 188 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Regulus cristatus K. L. Koch, Yarrell, I, p. 449 (part); Saunders, p. 57 (part).

DESCRIPTION.—Closely resembling *Regulus r. anglorum* (p. 252) and moults same but adults differ in having hind-neck and mantle paler and more greyish, not so greenish-brown; back rather paler, more greyish-green; ear-coverts and sides of neck generally rather paler and greyer. Greyish tint of hind-neck is best distinction.

Measurements and structure as in *R. r. anglorum*.

CHARACTERS AND ALLIED FORMS.—*R. r. azoricus* (Azores) has longer bill, *R. r. teneriffæ* (western Canaries) has black sides of crown broader and continued across fore-head, *R. r. interni* (Corsica and Sardinia) has grey on sides of crown and neck; other forms are found in the Caucasus, Asia and in N. America south to Guatemala.

BREEDING-HABITS.—Similar to those of British race. Eggs also indistinguishable and Food probably similar.

DISTRIBUTION.—*British Isles*.—Not very many migrant Goldcrests have been examined, but this form appears to be a passage migrant (Sept. to Nov.) to east coast, from northern Isles to Kent, regular in north, possibly not reaching east coast England every year, but numbers vary greatly and are sometimes very large; apparently occasionally reaching Ireland, but no specimens from Ireland identified. Returns March and April. Identified examples from coasts Northumberland, Yorks., Lincs., Norfolk, Kent, Sussex, Hants., and Isle of May, Sept. and Oct., from Sussex Dec., and from St. Catherine's Light (Isle of Wight) and Yorks., Oct. and Nov. and Fair Isle, both seasons.

DISTRIBUTION.—*Abroad.*—Europe from Scandinavia and north Russia (as far as pine-forests reach) to Pyrenees, Italy, Macedonia, Caucasus, and Asia Minor. Resident and vagrant. Represented by allied forms in British Isles, Azores, Canary Islands, Corsica, and Sardinia, Turkestan, Himalayas, and Japan.

107. *Regulus regulus anglorum* Hart.—THE BRITISH GOLDEN-CRESTED WREN.

REGULUS REGULUS ANGLORUM Hartert, Bull. B.O.C., xvi, p. 11 (Great Britain and Ireland).

Regulus cristatus K. L. Koch, Yarrell, i, p. 449 (part); Saunders, p. 57 (part); *R. r. anglorum* Hartert, Brit. B., i, p. 218.

DESCRIPTION (Plate 10).—*Adult male. Winter.*—Fore-head dusky-brown; centre of crown, fore-part lemon-yellow, hind-part bright burnished orange, sides of crown black with inner webs of feathers nearest central part lemon-yellow; hind-neck and rest of upper-parts yellowish-green rather browner on hind-neck and brighter yellowish on upper tail-coverts and rump, feathers of latter having white sub-terminal marks; lores, chin and line round eye greyish-white with inner circle of black immediately round eye; ear-coverts and sides of neck brown; throat pale brown; centre of breast and belly whitish tinged pale yellowish-brown; sides, flanks and under tail-coverts more heavily washed yellowish-brown; axillaries white tinged pale yellow; tail dark brown, outer webs fringed yellowish-green; primaries and secondaries dark brown fringed white on inner webs, first two primaries with outer webs brown, next four outer webs fringed yellow-green, rest and secondaries same but with outer webs as follows:—basal portion concealed by greater coverts greenish-yellow, and beyond the tips of the coverts a band of black followed by yellowish-green, three innermost secondaries fringed greenish and tipped whitish and without the black band; greater and median coverts as innermost secondaries; the whitish tips forming a double bar; lesser coverts yellowish-green. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—No moult (occasional body-feathers are renewed) and very little change by abrasion.

Adult female. Winter and summer.—Like male but centre of crown all lemon-yellow sometimes with two or three orange feathers.

Nestling.—Down, sooty-grey, short and scanty; distribution, inner supra-orbital and occipital. Mouth, inside bright orange, no tongue-spots; externally flanges pinkish-white.

Juvenile. Male and female.—Crown, hind-neck and mantle greyish-brown slightly tinged green and mottled black especially on sides of crown where there are black lines in adult; scapulars, back and rump greenish-brown; lores, round eyes (with inner

circle dark brown), chin and throat greyish-white; rest of underparts like adult but not so heavily washed with pale brown; wings and tail like adult but lesser coverts brown.

First winter and summer. Male and female.—Like adults. The juvenile body-feathers median and lesser coverts are moulted July-Sept. but not tail-, wing-feathers, or other wing-coverts.

Measurements and structure.—♂ wing 52-55 mm. (one 57), tail 37-40, tarsus 16.5-17.5, bill from skull 9.5-10.5 (12 measured). ♀ wing 51-54. Primaries: 1st 5-8 mm. longer than primary-coverts, 2nd equal to (or between) 7th or 8th, 4th and 5th longest, 3rd and 6th 1-2 shorter, 7th 4-6 shorter; 3rd to 6th emarginated outer webs. Secondaries about equal 10th primary, tips rounded, apex somewhat pointed. Tail slightly forked each feather with fine point and webs sloped off. Bill very fine. A few longish rectal bristles and a single somewhat stiff feather of loose structure covering each nostril. Tarsal joint feathered.

Soft parts.—Bill black-brown; legs and feet brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of Continental Goldcrest see under that form, and of Firecrest see under that species.

FIELD-CHARACTERS.—Confident nature permits of close approach, and its diminutive size, orange-yellow crest—absent in juvenile—olive-green upper-parts and two white wing-bars are easily made out, despite the bird's incessant restlessness. Very closely resembles Firecrest, but lacks black line through eye and black loreal streak. Flight weak and fluttering. In breeding-season very partial to coniferous trees. From autumn to spring essentially gregarious and sociable, often consorting with Tits of various species, and hunting bushes, hedgerows and woods for food. Call-note a high-pitched, and oft-repeated Tit-like "tsitt." Song, persistently uttered, is a feeble "weedle, weedle, weedle, weedle, tchip."

BREEDING-HABITS.—Normally nest is suspended under thick foliage towards the end of a branch of some conifer, but in some districts nests are commonly built against tree-trunks in ivy, and sometimes in furze or among boughs of evergreens and whitethorns. *Nest.*—Built of green moss woven together with spiders' webs and freely lined with feathers. *Eggs.*—7 to 10 as a rule, occasionally 11 or 12, varying from white to ochreous in ground-colour and with fine spots of brown usually in zone or cap at big end. Average of 100 eggs, 13.6×10.2 mm. *Breeding-season.*—Exceptionally at end of March, usually end of April or early May or end of May and early June. *Incubation.*—Lasts 12-13 days; apparently by hen only. Two broods.

FOOD.—Chiefly insects, their larvæ and eggs (coleoptera, diptera,

hymenoptera, etc.). Also American blight (*Schizoneura*), bud scales and spiders.

DISTRIBUTION.—*British Isles*.—Resident. Generally distributed, except in extreme north-west Scotland, where local; in O. Hebrides, where only once recorded as breeding (Stornoway, 1906); Shetlands, where it does not breed, and Orkneys, where only twice recorded as breeding. Goldcrests, probably of Continental form, having been proved to be so on Fair Isle, are however common as spring- and autumn-migrants in these three groups of islands. (British form almost exterminated in many parts by severe winter of 1916-17 is now gradually recovering its numbers.)

MIGRATIONS.—*British Isles*.—Few migrant specimens having been critically examined, it is impossible to define migrations of our birds, but there is a very considerable southward movement, in some years at all events, in autumn, regularly in Scotland, and a return in spring along east coast Great Britain, although probably many individuals are residents subject only to local movements. Some perhaps pass in autumn from Great Britain to Ireland, where Goldcrests have been noted at Lights fairly frequently in Aug., while numbers occur in Sept. and Oct.; those taken at Lights on south coast England may be leaving the country in autumn and returning in spring.

REGULUS IGNICAPILLUS

108. *Regulus ignicapillus ignicapillus* (Temm.)—THE FIRE-CRESTED WREN.

SYLVIA IGNICAPILLA Temminck, Man. d'Orn., ed. II, i, p. 231 (1820—Ex Brehm MS.: France, Germany, etc.).

Regulus ignicapillus (C. L. Brehm), Yarrell, I, p. 456; Saunders, p. 59.

DESCRIPTION (Plate 10).—*Adult male. Winter*.—Fore-head warm buff; centre of crown bright burnished red-orange, sides of crown black with inner webs of feathers nearest central part yellow; hind-neck and rest of upper-parts golden-green; feathers of rump with white subterminal marks; superciliary stripe extending to back of head and small patch under eye white; lores, narrow circle round eye and short line from gape black; behind eye and upper-part of ear-coverts greyish-black; rest of ear-coverts brown; base of sides of neck greenish-gold merging into golden-green of hind-neck; chin and throat pale brown; centre of breast and belly white; rest of under-parts very pale greyish-brown; axillaries and under wing-coverts white; tail dark brown, outer webs fringed golden-green; primaries, secondaries and wing-coverts as in *Regulus r. anglorum* but black band on primaries and secondaries shorter, not extending so far towards the tip of the feathers. This

plumage is acquired by complete moult in July-Sept. *Summer*.—No moult and practically no change by abrasion.

Adult female. Winter and summer.—Like male, but centre of crown orange-yellow, sometimes reddish-orange, but never so bright as in male.

Nestling.—(Not examined.)

Juvenile. Male and female.—Like that of *R. regulus anglorum*, but lores and upper-parts of ear-coverts blackish; mantle, scapulars and rump rather more green; innermost secondaries without whitish tips as in Goldcrest.

First winter and summer. Male and female.—Like adults. The juvenile body-feathers, median and lesser wing-coverts are moulted in July-Sept., but not tail-, wing-feathers, or other wing-coverts.

Measurements and structure.—♂ wing 52-55 mm., tail 39-42, tarsus 17-18, bill from skull 9.5-10.5 (12 measured). ♀ wing 51-53. Wing-formula and rest of structure as in Goldcrest.

Soft parts.—Bill black; legs and feet brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*R. i. madeirensis* (Madeira) has dull gold centre of crown and greater wing-coverts are black with white tips. Distinguished at once from Goldcrest by white superciliary stripe, black lores and line at gape, dark ear-coverts, greenish-gold sides of neck and more golden-green upper-parts.

FIELD-CHARACTERS.—Notes readily distinguishable from those of Goldcrest at close quarters, and white eye-stripe between two black ones is very noticeable, while bronze colour of sides of neck attracts attention (F.C.R.J.).

BREEDING-HABITS.—Very similar to those of Goldcrest, except that the nest is perhaps slightly more compact and smaller. Generally suspended under hanging branches of conifers, but occasionally also in juniper bushes. *Eggs*.—7 to 12, distinguished from those of Goldcrest by warm pinky hue of ground, but otherwise resembling them. Average of 100 eggs, 13.5×10.3 mm. *Breeding-season*.—Early in May and again in July in central Europe. *Incubation*.—Probably about 12 days, but reliable data lacking. Two broods.

FOOD.—Small insects and their larvæ and eggs (coleoptera, diptera, aphides, etc.), also spiders.

DISTRIBUTION.—*England and Wales*.—Fairly frequent visitor from Oct. to April along coast from Cornwall to Kent, and considered as annual autumn-visitor near Dover (Kent) and Scilly Isles, and nearly so in east Kent and Cornwall. Also fairly frequent along east coast up to and including Norfolk, more rarely Lines. and Yorks., and has occurred rarely in Cumberland, Northumberland, Wilts., Berks., Beds., Oxon., Salop, Gloucester and Surrey. One

near Pwllheli (Carnarvon), March 24, 1878. A pair Brecon, Feb. 27, 1899.

DISTRIBUTION.—*Abroad.*—Central and south Europe to north-west Africa and Asia Minor. Replaced by allied race in Madeira.

[NOTE.—Two examples of the AMERICAN RUBY-CROWNED WREN, *Regulus calendula calendula* (L.), now in the British Museum, said to have been shot near Loch Lomond in 1852, cannot be admitted, the evidence not being sufficient (Yarrell, I, p. 455; Saunders, p. 60).]

Genus PANURUS Koch.

PANURUS Koch, Syst. baier. Zool., p. 201 (1816—Monotype: *P. biarmicus*).

Bill short, culmen rounded with uncinate tip. Nostrils with an operculum and mostly covered by antrorse bristly plumules. Rictal bristles short and soft. Wing moderately long, narrow and somewhat pointed, 3rd, 4th and 5th primaries longest and about equal, 1st quite rudimentary, reduced to a very narrow, stiff, lanceolate feather, shorter than the primary-coverts. Tail very long, longer than wing, strongly graduated, outermost tail-feathers scarcely half as long as median pair; rectrices narrow, attenuated at tip. Under tail-coverts very long, equal to outermost tail-feathers. Tarsus strong, about twice as long as middle toe without claw, front distinctly scutellate. Plumage soft but not so copious as *Parus* and *Ægithalos*. Sexes different, male with a broad black moustache of elongated feathers, female without; male with black, female with buff under tail-coverts. Young resembling female, but back mostly black, 1st primary well-developed, nearly half as long as 2nd. Nest in reeds, eggs white, finely scribbled. One species in two subspecies in south Europe and temperate Palæarctic Asia eastwards to north China and Amurland.

PANURUS BIARMICUS

109. *Panurus biarmicus biarmicus* (L.)—THE BEARDED TITMOUSE.

PARUS BIARMICUS Linnæus, Syst. Nat., ed. x, i, p. 190 (1758—"Habitat in Europa." Ex Albin & Edwards, who state that they described Danish specimens, which probably came from Holstein; cf. Hartert, Vög. pal. Fauna, I, p. 403).

Panurus biarmicus (Linnæus), Yarrell, I, p. 511; Saunders, p. 99.

DESCRIPTION (Plate 10).—*Adult male.* *Winter.*—Fore-head, crown, nape ash-grey to pale, smoke-grey; hind-neck, mantle, back and rump yellowish tawny-brown (hind-neck occasionally tinged rose,



(HALF NATURAL SIZE.)

1, Northern Long-tailed Titmouse (*Aegithalos c. caudatus*). 2, Adult, 3, Juvenile of British Long-tailed Titmouse (*A. c. roseus*). 4, Adult, 5, Juvenile of British Golden-crested Wren (*Regulus r. anglorum*). 6, Fire-crested Wren (*R. i. ignicapillus*). 7, Adult male, 8, Adult female, 9, Juvenile of Bearded Titmouse (*Panurus b. biarmicus*). 10, Adult male, 11, Juvenile of Red-backed Shrike (*Lanius c. collurio*). 12, Juvenile Spotted Flycatcher (*Muscicapa s. striata*).

[Face p. 256.]

centre of mantle occasionally with a few black streaks, very rarely with a number of black streaks); scapulars white basally with cream-coloured tips; upper tail-coverts like rump but with bases rose-coloured, extent of latter varying considerably; ear-coverts pale ash-grey; lores, extending slightly over eye, and broad moustachial stripe black (feathers of "moustache" long and lanceolate); chin, throat and centre of breast white, latter tinged ash-grey; sides of base of neck and sides of breast tinged rose; centre of belly creamy-white; flanks tawny; under tail-coverts black; axillaries and under wing-coverts cream-colour; tail tawny-chestnut, tips slightly marked blackish, central pair more yellowish than rest, outer pair with outer web and tip of inner dusky-white and rest of inner web and base black, next pair with distal half of outer web dusky-white; primaries black-brown inner webs fringed white, 3rd to 7th with conspicuous white margins to outer webs, rest with yellowish-tawny margins; secondaries with margins of outer webs tawny, rest of outer webs becoming black on inner secondaries and inner webs of these feathers becoming creamy-white, innermost secondary entirely creamy-white; primary-coverts black with most of outer webs white; greater and median coverts black fringed and tipped tawny; lesser coverts ash-grey tipped yellowish-tawny. This plumage is acquired by complete moult in autumn. *Summer*.—No moult and scarcely any change in coloration by abrasion, but tail soon becomes very ragged.

Adult female. Winter and summer.—Fore-head, crown and nape yellowish-brown, sometimes without and sometimes with varying number of brownish-black streaks on crown; mantle, back, and rump as male, but more yellowish, not so reddish-tawny, and usually with some brown-black streaks; ear-coverts pale brown; lores and moustachial region dusky-white (not black as male; feathers of moustachial region somewhat elongated and occasionally with blackish shaft-streaks); base of neck and sides of breast occasionally with a slight rose tinge; flanks paler and more yellowish-tawny than in male; under tail-coverts as flanks (not black as in male); rest of plumage like male but tail and edgings of secondaries and wing-coverts paler and duller and lesser coverts not so grey.

Nestling.—Down absent. Mouth inside yellow with a number of white spots on palate and tongue.

Juvenile.—Crown, nape, and hind-neck yellowish-buff, sides of crown occasionally with blackish streaks; scapulars very pale yellow-buff with a few dark shaft-streaks; centre of mantle and back black, lower feathers of back with buff tips; rump and upper tail-coverts yellowish-buff; lores dusky; chin, centre of throat, breast and belly very pale yellowish-buff, rest of under-parts deeper, more tawny buff; tail: centre pair pale buff often with black shaft-line at tip, next pair mixture of black and buff, rest black with buff bases, outermost pair with tip and distal half of outer web

white, next (penultimate) pair with white tip, next with small buff tip; primaries and secondaries, greater and median wing-coverts as adult but edgings not nearly so bright (1st primary much larger); primary-coverts brown-black without white edgings; lesser coverts very pale buff slightly marked blackish.

First winter and summer. Male and female.—Apparently like adults. The juvenile plumage is completely (including wing- and tail-feathers) moulted in autumn.

Measurements and structure.—♂ wing 57-62 mm., tail 72-84, tarsus 20-22, bill from skull 8-9 (12 measured). ♀ wing 55-61, tail 75-79. Primaries: 1st in adults minute only visible from below, in juvenile plumage much broader and longer, being 5-6.5 mm. longer than longest primary-covert, 2nd equal to 7th or between 7th and 8th, only very occasionally longer than 7th or shorter than 8th, 3rd to 5th longest, 6th 1-3 mm. shorter; 3rd to 6th emarginated outer webs. Secondaries rather shorter than 10th primary, tips rounded. Tail graduated, central pair longest, next three pairs becoming shorter in steps of about 5 mm., 5th pair from centre (penultimate) about 10 mm. shorter than 4th, outermost pair about 20 mm. shorter than penultimate and 40-45 mm. shorter than longest. Under tail-coverts nearly as long as outermost tail-feathers. Tarsal joint feathered. Bill fairly strong, culmen curved, cutting edges of upper mandible slightly recessed. A few rictal bristles. Bristle-like feathers almost concealing nostrils. Body-plumage somewhat long and loose but less so than in *Ægithalos*.

Soft parts.—Bill: male, deep straw-colour; female, upper mandible and base and cutting edges of lower mandible greenish-horn, rest of under mandible yellow; legs and feet black; iris pale buff.

CHARACTERS AND ALLIED FORMS.—*P. b. russicus* (eastern Europe, Asia) is considerably paler. The graduated tail, tawny colouring, white edges to primaries, as well as black moustache and under tail-coverts in male, are distinctive specific characters.

FIELD-CHARACTERS.—Essentially a bird of reed-beds; in form and coloration alike unmistakable. Flight is direct and accomplished at same level—just above tops of reeds. Call-note a ringing “ping, ping.” Alarm-note “ee-ar.”

BREEDING-HABITS.—Generally nest is built among reeds or aquatic vegetation in swampy ground, not far from the edge of the bed, and low down. *Nest.*—Quite characteristic, built of dead leaves of reed or sometimes sedges, warmly lined with flowering tops of reeds and often a feather or two. Both sexes build, but lining is added by male. *Eggs.*—5 to 7, but sometimes 8 to 12 are found in one nest, and it is not rare to find an egg buried in lining of nest. Colour white with numerous fine streaks or scrawls and specks of liver-brown. Average of 106 eggs, 17.2×13.9 mm. *Breeding-*

season.—Occasionally eggs may be found at beginning of April, but usually about third week of that month, and thence onward to July, while young have been seen in the nest in September. *Incubation*.—13 days, male relieving female. Two or three broods reared.

Food.—In winter seeds of reed chiefly: also insects and their larvæ, especially larvæ of *Laverna phragmitella*. *Succinea* and *Pupa* found in crops by W. H. Dikes. Young fed on green caterpillars, also diptera, small neuroptera and trichoptera.

DISTRIBUTION.—*England*.—Resident in Norfolk and perhaps some Suffolk Broads, and in one locality in Devon. Formerly bred Sussex, Kent, Essex, Cambs., Hunts., and Lincs. To most south counties very rare vagrant, nearly always in winter, and has been recorded along Thames as far west as Gloucester; also very rare vagrant to some midland counties and as far north as Yorks., where a few have occurred. Many reports of birds seen are not well authenticated. Introduced Yorks. 1911 (*Brit. B.*, v, p. 108; VIII, p. 270).

DISTRIBUTION.—*Abroad*.—Europe, in east Spain, south France, Holland, Italy; formerly in various parts of Germany, and replaced by an allied race in Hungary, Roumania, south Russia and Asia, from Asia Minor probably to Manchuria.

FAMILY LANIIDÆ.

The Shrikes form a well marked and sharply limited section in the Palæarctic region, though the limits of the family are not so certain and undisputed in the tropics, especially in the Australasian region. Palæarctic *Laniidæ* are strikingly coloured, middle-sized Oscines (*cf.* p. 6) with laterally compressed strong bills, more or less strongly hooked at tip, before which, on cutting edge of upper mandible, is a distinct notch and tooth. Nostrils rounded, without operculum but more or less concealed by bristle-pointed antrorse feathers. Distinct rictal bristles. Tarsus fairly short, distinctly scutellate in front, outer lamina sometimes divided into scutes near base; feet strong. Plumage soft. Wings short and rounded in the less migratory *L. excubitor*, longer and more pointed in the strictly migratory *L. minor*, *collurio*, and *senator*. Primaries 10, 1st about as long as half 2nd, in *excubitor*, much less in others, 3rd and 4th or 2nd and 3rd longest. Rectrices 12, tail fairly long, rounded or almost graduated. Sexes similar or dissimilar, young always more or less barred, an ancestral character preserved in adults of some species, notably in North America and north Asia. Europe and Asia to Australia and Pacific, Africa and North America to Mexico, only two genera in Palæarctic fauna, one in British Isles.

Genus LANIUS L.

LANIUS Linnæus, Syst. Nat., ed. x, i, p. 93 (1758—Type by subsequent designation: *L. excubitor* L.).

Characters as indicated for family. Europe, Asia south to Celebes and Timor, Africa and North America to Mexico.

Key to species of genus LANIUS.

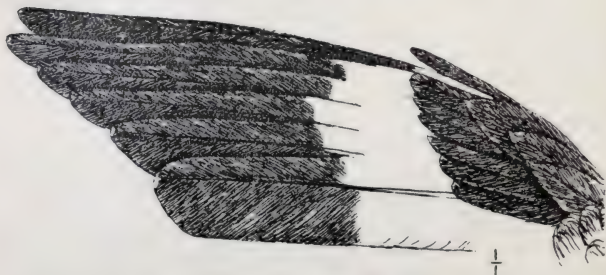
- | | | | |
|-----|---|---|-------------------------------------|
| 1 { | Second and third primaries longest . . . | 2 | <i>L. minor</i> , p. 260 |
| | Third and fourth primaries longest . . . | 2 | |
| 2 { | First primary about half second . . . | | <i>L. excubitor</i> , p. 263 |
| | First primary much less than half second . | 3 | |
| 3 { | Crown uniform | 4 | |
| | Crown barred | 5 | |
| 4 { | Crown black, fore-head white or cream . . | | <i>L. nubicus</i> , ♂ ♀ ad., p. 272 |
| | Crown and fore-head ashy-grey | | <i>L. collurio</i> , ♂ ad., p. 275 |
| | Crown brownish-red, fore-head black or blackish | | <i>L. senator</i> , ♂ ♀ ad., p. 268 |
| | Crown and fore-head rufous-brown | | <i>L. collurio</i> , ♀ ad., p. 275 |
| 5 { | Back rufous | | <i>L. collurio</i> , juv., p. 275 |
| | Back earthy-brown | 6 | |
| 6 { | Edges of wing-quills rufous | | <i>L. senator</i> , juv., p. 269 |
| | Edges of wing-quills whitish | | <i>L. nubicus</i> , juv., p. 273 |

LANIUS MINOR

110. *Lanius minor* Gm.—THE LESSER GREY SHRIKE.

LANIUS MINOR Gmelin, Syst. Nat., 1, i, p. 308 (1788—"Habitat in Italia, Hispania, Russia." Restricted typical locality: Italy).

Lanius minor J. F. Gmelin, Yarrell, 1, p. 205; Saunders, p. 149.



The Lesser Grey Shrike (*Lanius minor*),

Note differences in wing-formula as compared with Great Grey Shrike, and more white.

DESCRIPTION.—*Adult male. Winter.*—Fore-head, lores, under and over eye, ear-coverts and fore-part of crown black (a few grey feathers often amongst black in fore-head); rest of upper-parts pale blue-grey, rump rather paler than back, scapulars edged white; under-parts white, breast and flanks washed mauve-pink varying in strength; axillaries greyish-white, long under wing-coverts black-brown; tail, two centre pairs black with white bases, and small whitish tips, third pair with more white at base and about 5 mm. white at tip, fourth pair white with black shaft and large black mark (varying considerably in size and shape) on distal portion, two outer pairs white with shafts mostly black (penultimate pair sometimes with black spot on distal portion); primaries black with narrow brownish-white tips and white bases forming broad white bar (in 2nd primary white base is confined to inner web); secondaries black with rather broader and whiter tips, but without white bases; primary-, greater and median coverts black; lesser coverts browner, fringed grey. This plumage is acquired by complete moult in autumn. *Summer.*—A moult apparently confined to body-feathers takes place in Feb.-Mar., sometimes April, new plumage like old but cleaner and brighter and fore-head and fore-part of crown without any grey feathers.

Adult female. Winter.—Much like adult male but usually fore-head and fore-part of crown with more grey, ear-coverts browner-black, upper-parts duller not so clear blue-grey, under-parts less pink, more creamy. *Summer.*—Moult as in male, after which upper-parts become cleaner blue-grey but not so bright as male and fore-head and ear-coverts become blacker but not so jet-black as in male.

Nestling.—(Not examined.)

Juvenile.—Fore-head whitish; crown and hind-neck brown-grey, finely and rather closely barred dark brown; mantle same but not so closely barred; scapulars same but whitish at tips; back, rump and upper tail-coverts paler and with only faint bars; lores and ear-coverts black-brown; chin, throat and belly white; rest of under-parts pale cream-colour, flanks and under tail-coverts with very faint bars; tail as adult but usually with less white; primaries and secondaries as adult, but browner and innermost secondaries with buffish tips and a penultimate dark line; primary-coverts, greater and median wing-coverts brown-black, narrowly tipped buffish-white; lesser coverts greyer tipped same.

First winter. Male.—Like adult male but without, or with only a few, black feathers on fore-head, rest of upper-parts brownish-grey not pure blue-grey; under-parts whiter with creamy instead of pink tinge; wings browner with most of the pale tips of remiges and wing-coverts worn off. The juvenile body-plumage is moulted in autumn but not wings or tail, and frequently many barred juvenile body-feathers are retained throughout winter. *Summer.*—A complete (including wings and tail) moult takes place in Feb.-

March after which it becomes indistinguishable from adult except for a slight mixture of grey feathers on fore-head.

First winter. Female.—Like first winter male but with no black at all on fore-head, and browner on upper-parts. *Summer.*—Moults as first winter male and becomes apparently indistinguishable from adult female.

Measurements and structure.—♂ wing 114-123 mm., tail 86-96, tarsus 23-25, bill from feathers on culmen 13.5-16 (12 measured). ♀ wing 113-122. Primaries: 1st equal to, or 1-4 mm. shorter than, longest primary-covert, 3rd longest, 2nd 1-4 mm. shorter, 4th 3-6 shorter, 5th 11-14 shorter; 3rd and 4th emarginated outer webs. Secondaries about equal 10th primary, tips rounded. Tail somewhat graduated, three central pairs longest, outermost pair 11-16 mm. shorter. Bill strong, compressed, upper mandible hooked at point and cutting edges with tooth-like projection near tip. Strong rictal bristles, and bristle-like feathers covering nostrils.

Soft parts.—Bill black; legs and feet brown-black; iris dark brown.

CHARACTERS.—No subspecies recognized. Differs from *L. excubitor* in its very short 1st primary and different wing-formula, shorter tail, and adults in having black on fore-head.

FIELD-CHARACTERS.—Has the usual habit common to Shrikes of perching on top of some bush or tree and thence making stoops on its prey; also hovers. Breast tinged with pink and broad black stripe from eye to eye distinguish adults from Great Grey Shrike, while grey back and crown of head distinguish it from Woodchat and Red-backed Shrikes. Will drive away all birds up to size of Buzzard from nest (F.C.R.J.).

BREEDING-HABITS.—Usual site is from 10 to 30 ft. high in a deciduous tree by a roadside, where a good look-out can be kept. *Nest.*—Built of various flowering weeds, such as *Gnaphalium*, *Filago*, etc., lined with feathers, roots, wool, hair, etc., and readily distinguishable from that of *L. collurio*. *Eggs.*—5 to 7, nearly always bluish-green in ground-colour, rarely with a creamy or buff ground and brown and violet markings. Normally blotched with olive-brown and pale greenish-brown in a zone. Average of 100 eggs, 25.1 × 18.2 mm. *Breeding-season.*—About the last two weeks in May in central Europe. *Incubation.*—Said to be performed by both sexes and to last 15 days. Normally one brood.

FOOD.—Apparently chiefly insects (coleoptera, including the larger species, such as cockchafers (*Melolontha*), lepidoptera, the larger diptera, and orthoptera (including *Gryllotalpa*)), also millipedes (*Julus*).

DISTRIBUTION.—*England.*—Sixteen. Most Sept. and Oct. but

also Nov. (one), Jan. (one), April (three), May (four), June (one); from following counties:—Yorks. (one), Norfolk (three), Beds. (one), Kent (two), Sussex (five), Hants. (two), Devon (one), and Scilly Isles (one). *Scotland*.—One Fair Isle (Shetlands), June 3, 1913.

DISTRIBUTION.—*Abroad*.—South and central Europe, north to Livonia and west Siberia, east to Asia Minor, Persia, and Russian Turkestan to Altai Mountains, but absent from Spain. Migrant, wintering in tropical, and parts of south, Africa.

LANIUS EXCUBITOR

III. *Lanius excubitor excubitor* L.—THE GREAT GREY SHRIKE.

LANIUS EXCUBITOR Linnæus, Syst. Nat., ed. x, i, p. 94 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Lanius excubitor Linnæus, Yarrell, I, p. 199; Saunders, p. 147.

Lanius major Pallas, Yarrell, III, p. viii.



The Great Grey Shrike (*Lanius e. excubitor*). ♂ adult.

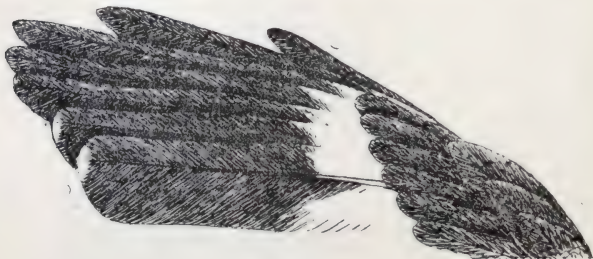
DESCRIPTION.—*Adult male. Winter*.—Fore-head, crown, mantle and back pearly blue-grey; scapulars with long white tips; rump and upper tail-coverts rather paler (sometimes whitish) than mantle; small superciliary stripe white; lores, stripe under eye, narrow circle round eye and broad stripe behind eye passing through ear-coverts black; whole under-parts white, often with faint rosy tinge on breast; axillaries with white tips and outer webs and grey inner webs; long under wing-coverts smoke-grey; tail: middle pair black with white bases and small dull white marks at tips, second pair same but with 5-10 mm. white at tip, third pair with 10-20 (sometimes even 30) mm. white at tip, fourth pair with 20-40 white at tip, but occasionally mostly white with only part of shaft and irregular mark on both webs black, fifth pair with 30-40 white at tip but occasionally all white with only part of shaft black, sixth (outer) pair sometimes all white, sometimes with part of shaft black, and sometimes with base of inner web or

mark of varying size black (distribution of black and white varies greatly individually); primaries black with white bases (forming bar about 10 mm. wide), tips of inner feathers white, outer feathers with outer webs narrowly fringed whitish; secondaries like primaries, but with longer white tips and rather less white at base, inner secondaries without white at base, sometimes all secondaries with no white showing at base; primary- and greater coverts black, usually with small dull white tips; median coverts black; lesser coverts grey with black bases. This plumage is acquired by complete moult in Sept.-Nov., wing- and tail-feathers commencing July. *Summer*.—A moult confined to body-feathers takes place March-May (sometimes June) new plumage being like winter.

Adult female. Winter.—Like adult male but breast usually with faint brown wavy bars. Many specimens indistinguishable from adult male. Moult as in male. *Summer*.—Moult as male, after which bars on breast usually absent, and when present very faint.

Nestling.—(Not examined.)

Juvenile. Male and female.—Upper-parts grey washed brown, feathers of hind-part of crown, nape, rump and upper tail-coverts usually with dark brown wavy bars but these sometimes absent; whitish superciliary stripe very small; lores and line through ear-coverts blackish-brown; under-parts white washed brownish, breast and flanks with faint brown wavy bars, chin and throat whiter with fewer bars, belly and under tail-coverts also whiter and without bars; tail-, wing-feathers and primary-coverts as adult, but innermost secondaries tipped brownish; greater coverts black, tipped brown; median coverts dark brown with tips greyish-brown speckled dark brown; lesser coverts greyish-brown speckled dark brown; all wing-coverts usually with dark penultimate crescentic lines.



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The Great Grey Shrike (*Lanius e. excubitor*).

Note differences in wing-formula as compared with Lesser Grey Shrike, and less white.

First winter. Male.—Like adult male but with faint brown wavy bars on breast, and thus like most adult females, but unmoulted juvenile greater coverts have remains of brown tips. The juvenile body-feathers, innermost secondaries, lesser and median wing-coverts and inner greater coverts are moulted from July to Dec., but occasionally a good many juvenile body-feathers are retained until spring moult. *Summer.*—Moult as in adult, after which does not appear to have bars on breast and tips of greater coverts being worn off it is usually indistinguishable from adult.

First winter. Female.—Like first winter male but bars on breast usually rather stronger. *Summer.*—After moult like adult summer female.

Measurements and structure.—♂ wing 111-118 mm., tail 107-117, tarsus 27-29, bill from feathers on culmen 16-18 (12 measured). ♀ wing 107-115. Primaries: 1st 14-17 mm. longer than longest primary-covert (about half 2nd), 2nd equal to or 1-3 shorter than 6th, 3rd and 4th longest, 5th 2-3 shorter, 6th 10-13 shorter; 3rd to 5th emarginated outer webs. Secondaries shorter or equal to 10th primary, tips rounded. Tail more graduated than in *L. minor*, central pair longest, rest becoming shorter and outermost 18-25 shorter than central. Bill and rictal bristles as in *L. minor*.

Soft parts.—Bill black-brown, paler base of lower mandible; legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For difference of *L. e. meridionalis* see under that form, *L. e. homeyeri* (south Russia, Rumania) has paler upper-parts and whitish fore-head and upper tail-coverts, *L. e. przewalskii* (Turkestan) is still paler and has more white on scapulars and tail- and wing-feathers, *L. e. mollis* (Siberia) has more brownish-grey upper-parts and white rump, *L. e. algeriensis* (north Morocco, north Algeria) has dark blue-grey upper-parts and grey under-parts, *L. e. dodsoni* (High Plateaux and-southern Atlas) is paler than last, *L. e. elegans* (northern Sahara to Palestine) is still paler, *L. e. koenigi* (Canaries) is somewhat like last two but smaller, *L. e. aucheri* (Palestine, Persia) has very pale blue-grey upper-parts and grey under-parts; other forms are found in other parts of Asia and Africa and in America. *L. minor* differs in having very short 1st primary besides black fore-head, shorter tail and other differences.

FIELD-CHARACTERS.—Flight undulating and interrupted. Alights with upward flight on high vantage-point, which it leaves from time to time in pursuit of prey. Like other Shrikes constantly moves its tail when perched. Large size, longer fan-shaped tail, grey back, white under-parts, black ear-coverts, black, white-edged tail, black wings with one, or two, white wing-bars are distinguishing features. Alarm note a harsh shriek; has considerable powers of mimicry (N.F.T.).

BREEDING-HABITS.—Nesting-sites vary according to locality, some-

times in small pines, or big thorn bushes, at other times high up in oaks, birches or apple trees. *Nest*.—Bulky, chiefly built of dry grass and some moss on foundation of heather twigs, lined with roots, wool, hair, and varied assortment of feathers. *Eggs*.—5 to 7, occasionally 8 or even 9; ground-colour ranges from greyish to buff, blotched and spotted with two shades of olive and shell-marks of purplish-grey. Often a zone or cap at big end. Average of 117 eggs, 26.3×19.3 mm. *Breeding-season*.—Latter part of April or early May in central Europe, but in the high north not till late May or early June. *Incubation*.—Said to last 15 days. Normally one brood.

FOOD.—Insects (coleoptera, hymenoptera, orthoptera, lepidoptera and their larvæ); also small frogs, lizards, and blindworms, field-mice, and birds of many species, chiefly those about the size of the Finches, Warblers and Larks, but occasionally even Blackbird, Thrush, Fieldfare, etc.

DISTRIBUTION.—*Great Britain*.—Annual autumn and winter-visitant along east side, arriving second week Oct. onwards, generally singly, but periodically in fair numbers. Much more irregular spring and only occasional summer. Most spring records in March, up to mid-April normal, late date one, Essex, May 24, 1916. Noted Fair Isle on both passages, and often occurs Orkneys, but apparently much rarer Shetlands. Elsewhere irregular, especially in west, and very rare casual to west Wales and Hebrides. *Ireland*.—Rare casual, most frequently in north.

DISTRIBUTION.—*Abroad*.—Europe from north Russia and Scandinavia to Pyrenees and Alps, and east to Hungary and River Ob. On migration farther south, but not to Africa. Replaced in south France, Spain and Portugal, on Canary Islands, in north-west Africa, north-east Africa, south-east Europe and parts of Asia and North America, by a number of other forms.

112. *Lanius excubitor meridionalis* Temm.—THE SOUTH EUROPEAN GREY SHRIKE.

LANIUS MERIDIONALIS Temminck, Man. d'Orn., ed. II., i, p. 143 (1820—S. Italy, Dalmatia, S. France, etc. Restricted typical locality: Provence). *Lanius meridionalis*, J. B. Nichols, Brit. B., v, p. 75.

DESCRIPTION.—*Adult male. Winter and summer*.—Like *L. e. excubitor*, but whole upper-parts dark slate-grey; scapulars with conspicuous white tips; narrow white stripe from nostrils over eye more conspicuous than in *L. e. excubitor*; chin, vent, and under tail-coverts white; flanks pinkish-grey; axillaries and under wing-coverts as in *L. e. excubitor*; rest of under-parts pink with mauve tinge; tail as in *L. e. excubitor*, but generally with less

white and more black; primaries with less white showing at base; secondaries never with white at base; wing-coverts as in *L. e. excubitor*. This plumage is acquired by complete moult in autumn. *Summer*.—A moult confined to body-feathers takes place from Feb.-April, new plumage being like winter.

Adult female. Winter and summer.—Like adult male and moults same. Breast not barred as in *L. e. excubitor*.

Nestling and juvenile.—(Not examined.)

Measurements and structure.—♂ wing 103-111 mm., tail 108-121, tarsus 28-32, bill from feathers on culmen 16-20 (12 measured). ♀ wing 103-107. Primaries: 1st 11-19 mm. longer than longest primary-covert, 2nd equal to (or between) 6th and 7th, 4th longest, 3rd and 5th equal to it or 1-3 shorter, 6th 5-8 shorter. Other structure as in *L. e. excubitor*.

Soft parts.—As in *L. e. excubitor*.

CHARACTERS.—Distinguished by combination of dark upper-parts and pink under-parts.

FIELD-CHARACTERS.—Similar to those of Great Grey Shrike, but crown and mantle darker and faint rosy flush on breast. Less conspicuous and shyer than Great Grey Shrike (F.C.R.J.).

BREEDING-HABITS.—Breeds sometimes in large clumps of brambles and sometimes in young pines or ilex trees. *Nest*.—Similar to that of Great Grey Shrike, built of coarse grass and lined with finer grass and a few feathers. Bits of rag, lichens, and *Gnaphalium* may be found on outside of nest. *Eggs*.—4 or 5 to 7, markings generally of a much richer and warmer brown than in the allied form, and often forming a bold zone. Average of 117 eggs, 27.5×19.6 mm. *Breeding-season*.—Irregular, some birds laying in March and others not till mid-April. *Incubation*.—No authentic data. Possibly two broods, as fresh eggs have been taken in June,

FOOD.—Information scanty, but apparently feeds chiefly on insects and their larvæ, especially coleoptera, and orthoptera and probably small as well as young birds. One seen with large worm in bill in Spain; also observed to catch lizard.

DISTRIBUTION.—*England*.—One. Male near Pett (Sussex), Jan. 2, 1911 (*ut supra*). [The specimen recorded from near Norwich, Dec., 1890 (J. H. Gurney, *Trans. Norf. & N. Nat. Soc.*, VIII, pt. iii, pp. 352-3, and *Brit. B.*, I, p. 124), was wrongly identified (*Brit. B.*, v, p. 111).]

DISTRIBUTION.—*Abroad*.—Spain, Portugal, south-east France, once at Gien on the Loire. Casual in Italy from the Riviera to Rome and in Heligoland.

LANIUS SENATOR*

113. *Lanius senator senator* L.—THE WOODCHAT SHRIKE.

LANIUS SENATOR Linnaeus, Syst. Nat., ed. x, i, p. 94 (1758—"Habitat in Indiis." *Errore*. Rhine fixed as typical locality by Hartert, Vög. pal. Fauna, I, p. 434).

Lanius auriculatus P. L. S. Müller, Yarrell, I, p. 215; *Lanius pomeranus* Sparrman, Saunders, p. 153.



Upper wing: The Corsican Woodchat Shrike (*Lanius s. badius*).
Lower wing: The Woodchat Shrike (*Lanius s. senator*).

DESCRIPTION.—*Adult male. Winter.*—Sides of fore-head and lores white; centre of fore-head and band across fore-part of crown black; rest of crown, nape, and upper mantle chestnut; rest of mantle brown-black, feathers narrowly tipped brownish-chestnut; scapulars white sometimes tinged cream; back grey washed

* This species is rather unfortunate in its names. Until 1871 it was almost universally called *L. rufus*, or sometimes *ruficeps* or *rutilus*. Then Mr. Dresser introduced *auriculatus*, and this alteration of a well-known, time-honoured name was unblushingly accepted by Saunders in the same year, and by Gadow, but in 1883 Saunders adopted *pomeranus*, which had to give way to *senator*, since the adoption of the 10th edition of Linnaeus, 1758.—E.H.

cream and feathers lightly tipped buff; rump and most upper tail-coverts white usually tinged cream; long upper tail-coverts grey tipped black; superciliary stripe (joining black band across crown), ear-coverts, and extending in a broad stripe nearly to shoulders black; a few white feathers immediately behind eye; whole of under-parts white tinged more or less with cream-colour, flanks dark cream; axillaries and under wing-coverts greyish-black and white; tail black, central pair with little or no white at base, and with very narrow white tip, rest with white bases (concealed by coverts) and larger white tips, amount of white at base and tip increasing on outer feathers, outermost being mostly white with only portion of inner web black; primaries brown-black very narrowly edged whitish and with white bases showing 5-10 mm. beyond primary-coverts; secondaries brown-black with no white at base but with broader white or cream-coloured edgings and tips; primary-coverts brown-black with small white tips; greater, median and lesser coverts as secondaries. This plumage is acquired by complete moult from Aug.-Dec. *Summer*.—No moult. Abrasion usually causes crown to become paler, mantle more uniform, most tips of feathers wearing off, back purer grey, white tips and edgings of tail, wing, and wing-coverts become much reduced.

Adult female. Winter and summer.—Like adult male, but band on fore-part of crown, and stripe through ear-coverts not so broad, and more or less mixed with chestnut; mantle, wings and tail brown not black; back browner not so grey; varying number of feathers of upper-breast and flanks with dusky-black crescentic bars.

Nestling.—(Not examined.)

Juvenile. Male and female.—Fore-head, crown and whole upper-parts varying from greyish-white to rufous-buff, each feather with a broad brown-black subterminal crescentic band; scapulars rather paler; upper tail-coverts more rufous; rump nearly uniform pale rufous-buff; ear-coverts brownish marked black; under-parts creamy-white, most feathers with dusky-black crescentic bands but centre of belly and under tail-coverts either without or with only a few bands; tail brown with tips and bases (except of central pair) cream-colour and with dark subterminal lines, outermost feathers with most of inner web brown; primaries brown with wider and more buff edgings and buffer or more creamy not so white at base as in adults; secondaries brown with broad buff fringes and whitish tips, innermost feathers with buff markings of varying extent; primary-coverts much as adult but with longer white tips; greater coverts brown with most of outer webs rufous-buff with black subterminal line and white tips; median and lesser coverts whitish with black crescentic bars as feathers of upper-parts.

First winter. Male and female.—New feathers of fore-head, crown and nape rufous with black subterminal crescentic bands;

of mantle, scapulars and back rufous-brown with faint dark subterminal bands; of rump and upper tail-coverts buff with black subterminal crescentic bands; of under-parts cream-coloured, those of upper-breast and flanks having black subterminal crescentic bands; of lesser and median wing-coverts dark brown with rufous tips. A varying number of juvenile body-feathers, lesser and median wing-coverts are moulted June-Sept., but a good many juvenile feathers are always retained, as well as the greater and primary-coverts, and wing- and tail-feathers. *First summer. Male and female.*—The mixed plumage of juvenile and first winter is completely moulted from Nov.-March, except for primary-coverts which appear not to be moulted and frequently two or three primaries or secondaries. New plumage like adults but occasionally males have a few feathers on flanks with black crescentic bands and females appear to have more of these feathers than adult females. In males primary-coverts are distinctly brown and frequently some primaries or secondaries being unmoulted are brown and worn.

Measurements and structure.—♂ wing 92-103 mm., tail 74-84, tarsus 23-25, bill from feathers on culmen 13-14.5 (12 measured). ♀ wing 91-103. Primaries: 1st 3-8 mm. longer than longest primary-covert, 3rd and 4th longest, 2nd 5-10 mm. shorter, 5th 3-7 shorter, 6th 9-15 shorter; 3rd to 5th emarginated outer webs. Tail fairly square except for two outer pairs, outermost being about 10 mm. short and penultimate 3-5 short. Bill and rictal bristles as in *L. minor*.

Soft parts.—Bill bluish-black, base of lower mandible pale slate (upper dark smoke-colour, lower paler in juvenile); legs and feet slate-black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *L. s. badius* see under that form, *L. s. niloticus* (Persia, Palestine, winter north-east Africa) has basal third of central tail-feathers white. Chestnut crown, black mantle, and white scapulars and rump distinguish the species.

FIELD-CHARACTERS.—In flight has black and white appearance and white rump is noticeable, at rest chestnut crown and nape and white scapulars are conspicuous, as well as white breast, which shows up at considerable distance. Like other Shrikes, is very fond of posting itself on tops of trees, bushes and posts and wires, from which it darts at its prey either in the air or on the ground, but it also sometimes frequents thickish woods. Fairly tame and confiding, especially when feeding young. Its call and alarm notes are very harsh and somewhat varied. The young when fledged have grey appearance, are usually concealed amongst foliage of trees or bushes and have a single, somewhat piping, call-note (H.F.W.).

BREEDING-HABITS.—Nests on outer branches of trees (olive, orange,

oak, etc.) as a rule and seldom less than 10-ft. from ground but occasionally also in bushes and young trees. *Nest*.—Substantially built of roots and branches of various flowering weeds, especially cudweed (*Gnaphalium*). Cup neat and deep, lined finer materials, bits of wool, hair or feathers. *Eggs*.—Usually 5 to 6, occasionally 7, with pale greenish ground and markings of greyish-brown with ashy shell-marks, generally forming a zone at big end. Occasionally sets with brownish-yellow or creamy ground are met with, and a rare erythristic type has a salmon-pink or warm-cream ground with red-brown markings. Average of 100 eggs, 22.8×16.9 .—*Breeding-season*.—From late April onward in Spain, but usually in May and generally towards end of month in central Europe. *Incubation*.—About 14-15 days. One brood.

Food.—Small birds (Swallows, Finches and Warblers) and their young or eggs; insects (coleoptera, lepidoptera, orthoptera, hymenoptera, etc.) and their larvæ; also worms.

Distribution.—*England*.—Some forty at intervals, mostly in south, and east as far north as Norfolk; very rarely elsewhere. Occurrences all between spring and autumn, largest number May and June. Not recorded from:—Lines., Rutland, Hunts., Beds., Bucks., Gloucester, Salop, Staffs., Leicester, Warwick, and Middlesex, nor from Wales. Said to have twice nested Isle of Wight. *Scotland*.—One Isle of May (Forth), Oct. 19, 1911; one Auskerry (Orkneys), June 6, 1913; one Fair Isle (Shetlands), June 4, 1913. *Ireland*.—One Blackwater Lightship (Wexford), Aug. 16, 1893; one Tuskar Rock Light (Wexford), May 26, 1917.

Distribution.—*Abroad*.—North-west Africa and Mediterranean countries generally, north to north Germany, Holland, and Belgium, east to south Russia, Caucasus, and Asia Minor. Migrant, south in winter to Sahara, Senegambia and Nigeria. Rare Canaries, casual Madeira. Replaced in Corsica and Sardinia, Persia and Palestine, by closely allied forms.

114. *Lanius senator badius* Hartl.—THE CORSICAN WOODCHAT SHRIKE.

LANIUS BADIUS Hartlaub, Journ. f. Orn., 1854, p. 100 (Gold Coast).

Lanius senator badius Hartl., C. B. Ticehurst, Bull. B.O.C., xxv, p. 76; *id.*, Brit. B., III, p. 369.

Description.—*Adult male and female*.—Like *L. s. senator* but outer five or six primaries without white at base and rest of primaries with only a little creamy-white at base; white of rump more restricted, more of the upper tail-coverts being brownish-grey; less white at base of tail-feathers; chestnut of crown and nape in fresh plumage darker. Moults as in *L. s. senator*.

Nestling.—(Not examined.)

Juvenile.—Like that of *L. s. senator* but without white at base of outer five or six primaries and with less white at base of tail-feathers.

First winter.—Like *L. s. senator* but without white at base of outer five or six primaries, less white at base of tail and first winter feathers of mantle apparently rather darker.

Measurements.—♂ wing 96-104 mm. (larger on average than *L. s. senator*), tail 78-85, tarsus 23-35, bill from feathers on culmen 13-15 (12 measured). *Structure* as in *L. s. senator*.

BREEDING-HABITS.—Similar to those of Woodchat, but perhaps nests more often in bramble thickets and bushes. *Nest*.—Also similar. *Eggs*.—Slightly larger on average, but similar in type: erythristic sets about 4 or 5 per cent. Average of 60 eggs, 23.1×17.27 . *Breeding-season*.—Usually about fourth week in May in Corsica.

DISTRIBUTION.—*England*.—One, Romney Marsh (Kent), June 29, 1909 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Balearic Islands, Corsica, Sardinia and Capraia and near Lazio (Italy), wintering in west Africa (Gold Coast. Nigeria), passing through Tunisia and Algeria, casual Madeira.

LANIUS NUBICUS

115. *Lanius nubicus* Licht.—THE MASKED SHRIKE.

LANIUS NUBICUS Lichtenstein, Verz. Doubl. Mus. Berlin, p. 47 (1823—Nubia).

Lanius nubicus, Nicoll, Bull. B.O.C., xvi, p. 22; Saunders, Brit. B., I, p. 11.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-head and broad stripe over eye white; crown, nape, mantle, back and rump glossy black, some feathers of lower mantle and back with small buff tips and feathers of rump with greyish-white bases showing here and there; scapulars white; upper tail-coverts glossy-black tipped and margined on outer webs white; lores dusky; ear-coverts brown-black; chin, throat, centre of belly and under tail-coverts white; breast, sides and flanks rusty-chestnut; axillaries and most under wing-coverts white but those covering primaries dusky-



The Masked Shrike (*Lanius nubicus*).
♂ adult.

black ; tail black and white : two central pairs all black, third pair with small white tip, fourth pair with varying amount of white on distal half, two outer pairs white with black shafts and black edging at base of inner webs ; primaries with about basal half white and distal black ; secondaries black, with tips and edgings to outer webs white ; primary-coverts black ; rest of wing-coverts black edged and tipped white, lesser coverts showing very little black. This plumage is acquired by complete moult Aug.-Nov., and occasionally Dec. *Summer*.—A moult confined to body-plumage takes place Jan.-March, new plumage being like that of winter. Edgings and tips gradually wear off inner secondaries, wing-coverts and upper tail-coverts, making these parts more uniform black.

Adult female. Winter.—Like adult male but fore-head, scapulars and edgings and tips of inner secondaries and wing-coverts cream-coloured not white ; rest of upper-parts dark greyish-brown, the feathers with very narrow rusty-buff tips, crown and nape often blackish ; under-parts usually white less richly marked with rusty-chestnut than male ; wing- and tail-feathers browner black, not so jet-black. Moult as male. *Summer*.—Moult as male and plumage as winter female.

Nestling.—(Not examined.)

Juvenile. Male and female.—Fore-head, crown and mantle pale brown, each feather with blackish-brown crescentic band ; scapulars whitish with black-brown crescentic bands ; rump and upper tail-coverts darker brown and bands less conspicuous ; small stripe over and behind eye white ; ear-coverts greyish-brown ; whole under-parts white, closely barred with dark brown crescentic bands ; chin and centre of belly with few bands ; tail- and wing-feathers as adult but browner, not so black ; inner secondaries and greater wing-coverts dark brown mottled pale brown and with pale buff edgings ; primary-coverts brown-black tipped greyish ; median and lesser coverts as mantle. Males can be distinguished (by comparison) from females by their less brown and more blackish tail- and wing-feathers and primary-coverts.

First winter. Male.—Somewhat like adult female but feathers of fore-head with black crescentic bands and all feathers of rest of upper-parts with longer rusty tips especially on crown and nape on which little black shows. The juvenile body-plumage, inner secondaries, greater, median and lesser wing-coverts are moulted June-Oct., but not primaries, primary-coverts, rest of secondaries or tail, and frequently two or three outer greater coverts and a few body-feathers are retained. *Female*.—Fore-head speckled brown ; rest of upper-parts not so dark as adult female and with longer rusty tips to the feathers ; wing and tail-feathers browner. Moult as male. *First summer. Male*.—The first winter body-plumage is moulted Jan.-April and except for brownish wings and tail and primary-coverts it becomes indistinguishable from adult

but occasionally a few first winter body-feathers are retained. *Female*.—Moult as male. Fore-head slightly speckled and crown and mantle paler and with longer brown tips than in adult female.

Measurements and structure.—♂ wing 86-94 mm., tail 85-94, tarsus 22-24, bill from feathers on culmen 11.5-13 (12 measured). ♀ wing 85-94. Primaries: 1st 5-10 mm. longer than longest primary-covert, 3rd and 4th longest, 5th 1-2 mm. shorter, 2nd 8-11 shorter, 6th 5-7 shorter; 3rd to 5th emarginated outer webs. Secondaries about equal 10th primary, tips rounded. Tail fairly square, but outermost pair about 20 mm. and penultimate pair about 5 shorter than others. Bill and rictal bristles as in *L. minor*.

Soft parts.—Bill black, base of lower mandible dark slate; legs and feet slate-black; iris dark brown.

CHARACTERS.—No subspecies. Black and white upper-parts and chestnut flanks are distinctive.

FIELD-CHARACTERS.—Contrast of black and white in plumage and rufous under-parts makes it conspicuously different from other British Shrikes. Flying at a distance might be confused with Woodchat, which, however, has white rump. Usually perches on bough fairly near ground from which it darts to ground or into air to catch an insect. Note a harsh, complaining, almost squealing "keer, keer, keer" (H.F.W.).

BREEDING-HABITS.—Usually breeds in olive-trees about 8-10 ft. from ground, on main branch. *Nest*.—Small, neatly built of roots, rags, bents, etc., lined fine roots and fibres. *Eggs*.—4-6, sometimes 7; pale buff or yellowish-brown; with zone of umber-brown and deep leaden-coloured spots, chiefly round large end. Average of 100 eggs, 20.7×15.7 mm. *Breeding-season*.—From end April or early May to June in Asia Minor; from mid-April onward in Palestine. Two broods.

FOOD.—Chiefly insects (orthoptera, coleoptera, etc.): not observed to take young birds.

DISTRIBUTION.—*England*.—One adult male, Woodchurch (Kent), July 11, 1905 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Breeds in south-west Persia, Asia Minor, Cyprus and Syria, formerly also in Greece. Winters in north-east Africa and south Arabia.

LANIUS COLLURIO

116. *Lanius collurio collurio* L.—THE RED-BACKED SHRIKE.

LANIUS COLLURIO Linnæus, Syst. Nat., ed. x, i, p. 94 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Lanius collurio Linnæus, Yarrell, i, p. 209; Saunders, p. 151.

DESCRIPTION (Plate 10).—*Adult male. Winter.*—Narrow line on fore-head black ; whole crown, nape and hind-neck ashy blue-grey ; mantle and scapulars extending on to back bright bay ; rest of back, rump and upper tail-coverts blue-grey, feathers indistinctly edged rufous ; lores, under and immediately round eye and ear-coverts black ; usually a whitish line over and behind eye ; chin dull white ; rest of under-parts pale pearly-pink, darker on flanks and white in centre of belly and under tail-coverts ; axillaries white with dusky-black bases ; tail : central pair black with small whitish tips, next pair same but with about basal half white, rest with about basal two-thirds white, shafts black and longer white tips ; primaries and secondaries brown-black with narrow edgings, rufous on outer webs and whitish on inner webs, inner primaries with concealed white bases, inner secondaries with broader rufous edgings and innermost with still more rufous and with whitish tips ; primary-coverts like primaries ; all wing-coverts bay like mantle, with inner webs and bases of feathers brown-black. This plumage is acquired by complete moult, body-feathers often commencing July and wing- and tail-feathers and rest of body-feathers usually not moulting until Dec.-Feb. and sometimes not complete until March. *Summer.*—No moult. Plumage like winter. Abrasion makes little difference except that white tips wear off central tail-feathers.

Adult female. Winter.—Fore-head brown to rufous-brown, often speckled black ; crown and nape brown to rufous-brown often tinged grey, a few feathers sometimes with small black spots at tip ; hind-neck usually greyer and less rufous-brown ; mantle and scapulars brown to bright rufous-brown, a few feathers sometimes with fine penultimate bands ; back, rump, and upper tail-coverts greyish-brown, feathers with indistinct pale tips and penultimate blackish bands, longer upper tail-coverts more rufous ; lores and stripe behind eye whitish speckled black ; ear-coverts dark brown or rufous-brown ; under-parts white or creamy-white, sides of throat, breast and flanks more or less heavily marked with black-brown crescentic bands ; axillaries white with inner webs and bases dusky-black ; tail dark brown usually with obsolete darker bars, tips white with penultimate dark line, outer pair (sometimes two outer pairs) with white edging to outer web ; primaries and secondaries as male but browner ; wing-coverts as male but browner and darker. (Exceptional examples have crown nearly as grey as male, lores and ear-coverts blackish, and few crescentic bands on under-parts. General colour of upper-parts varies considerably individually some being much more rufous than others). Moult as in male. *Summer.*—As winter.

Nesting.—Down absent. Mouth inside orange-yellow, no spots ; externally flanges pale yellow.

Juvenile. Male and female.—Whole upper-parts varying from buff to rufous closely barred with black crescentic bands ;

ear-coverts darker and more uniform ; under-parts cream-coloured, each feather with blackish crescentic band but chin, middle of belly and under tail-coverts with only a few dark marks ; tail as adult female but penultimate dark lines at tip more distinct ; primaries and secondaries as adult female but innermost secondaries with distinct buff or rufous margins and penultimate black lines ; primary-coverts with longish buff or rufous tips ; greater coverts brown-black with rufous edgings and usually rufous spots at tip and penultimate black bands ; median and lesser coverts same but with part of centres also buff or rufous.

First winter. Male and female.—Much resembling adult female but crown and rump more rufous and most feathers of upper-parts including wing-coverts and innermost secondaries with black crescentic bands ; under-parts like adult female. Upper-parts darker and more rufous-brown than juvenile and not nearly so much barred either on upper- or under-parts. Apparently no difference between male and female. Most of the juvenile body-feathers and lesser and median wing-coverts are moulted July-Sept., but a varying number of body-feathers and wing-coverts are retained, as well as primary-coverts, wing- and tail-feathers and usually greater coverts. *First summer.*—The first winter-plumage together with remaining juvenile feathers are completely (including wings and tail) moulted Nov.-Feb., when *male* becomes indistinguishable from adult male but *female* differs from adult female in having varying number of feathers of upper-parts, wing-coverts, and inner secondaries with black concentric bands narrower than in first winter.

Measurements and structure.—♂ wing 88-98 mm., tail 70-82, tarsus 22-24.5, bill from feathers on culmen 12-13.5 (12 measured). ♀ wing 87-96 mm. Primaries : 1st 1-4 mm. longer than longest primary-covert, 3rd longest, 2nd 4-9 shorter, 4th 1-3 shorter, 5th 5-8 shorter, 6th 10-13 shorter ; 3rd and 4th primaries emarginated outer webs. Secondaries equal to or shorter than 10th primary, tips rounded. Tail fairly square except for outermost pair which is about 10mm. shorter. Bill and rictal bristles as in *L. minor*.

Soft parts.—Bill black (adult male) brown-horn (female and young) ; legs and feet grey-black (adult male), brownish-grey (female and young) ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—Subspecies described from Caucasus and Persia require further study. Grey crown and rump and bay mantle distinguish adult male ; female differs from *L. senator* in having no white on rump, less white in outer tail-feathers, more rufous mantle ; juvenile distinguished from that of *L. s. senator* by want of white at base of primaries but difficult to distinguish from that of *L. s. badius* except for less white in outer tail-feathers.

FIELD-CHARACTERS.—Grey crown and nape, black lores and ear-

coverts, and red back distinguish male from all other British birds. Coloration of female less pronounced, russet-brown above and buffish-white barred with brown beneath, but both sexes characterized by their trim, alert pose and a certain fierceness of aspect. Usually perches on topmost twig of bush or hedge, a telegraph wire, or other conspicuous station affording good look-out. Tail frequently raised and depressed, and swung from side to side through a long curve. During flight, which is low and swooping, pointed wings and long tail are noticeable. Song, a sweet warble only audible at close quarters. Alarm-note a harsh "chack, chack," and—under great excitement—"kaup." Hunger-cry of young a querulous hawk-like "kee, kee."

BREEDING-HABITS.—Nests in thick clumps of brambles, sapling trees in thickets or straggling hedgerows, usually 3 to 6 ft. from ground, occasionally higher. *Nest.*—Rather large: built of green moss, bents, stalks, etc., neatly lined with fine roots and hair with a little wool or down at times. Often resorts to same breeding-place year after year. *Eggs.*—Usually 5 to 6 in first layings, sets of 7 being rare in England. Although alike in a clutch, they vary much, the ground-colour ranging from decided pinkish to brownish, pale greenish, creamy and even white. The last named sometimes have no markings but as a rule markings form a zone at big end of brown or red-brown spots with leaden shell-marks. Erythristic eggs have always red-brown markings and greenish eggs are marked with umber-brown. Average of 100 British eggs, 22.9×17.06 mm. *Breeding-season.*—Usually towards end May and early in June. Only one brood, but if first nest is destroyed birds will lay two or three times in same locality. *Incubation.*—15-16 days by hen only (J. H. Owen). *Fledging-period.*—14-15 days (*id.*).

FOOD.—Insects (coleoptera, lepidoptera, orthoptera, hymenoptera, especially *Bombus*, and diptera). Birds and their young (Chaffinch, Linnet, Yellow Bunting, Meadow-Pipit, Yellow Wagtail, Wren, Sand-Martin, Blue Tit and small young of Pheasant, Red-legged and Common Partridge); frog. J. H. Gurney also records a shrew impaled in a "larder" and Oldham a young bank-vole.

DISTRIBUTION.—*England and Wales.*—Summer-resident (early May to late August). Also autumn and spring passage-migrant. Irregularly distributed throughout south and central England and in Wales, chiefly in wooded districts. On west side of Pennine chain breeds very rarely in Cheshire and as far north as Cumberland, but on east side now only nests irregularly in Yorks., except near Sedbergh (north-west) where it is annual. In Durham and Northumberland only a casual visitor. *Scotland.*—Occasional visitor to south-east (the records of its having nested are discredited, cf. *Brit. B.*, II, p. 410). Very rare beyond Forth, and very rare or unknown in west. Has occurred three times Shetlands (the record

of its having bred cannot be substantiated), three or possibly four times Orkneys, fairly regularly in May-June and Sept. Fair Isle, and twice O. Hebrides (Flannan Isles), May and Sept. *Ireland*.—Three. Near Belfast (Down), Aug. 10, 1878; Wicklow Head Light, Sept. 1, 1908; Fastnet Rock Light (Cork), Sept. 26, 1910.

DISTRIBUTION.—*Abroad*.—From about lat. 64° north, throughout Europe, south to Cantabrian Mountains and Pyrenees, Italy and (?) Sicily, Greece, Asia Minor, and north Syria. Migrant, wintering in tropical and south Africa. Replaced in Corsica and Sardinia, in Transcaucasia, Persia and west Turkestan, by closely allied forms which require further study.

FAMILY BOMBYCILLIDÆ.

Middle-sized ten-primaried Oscines with the first primary minute (less than half primary-coverts). Wing long and pointed, second and third primaries nearly equal and longest, longest primaries exceeding secondaries by much more than one-third length of wing. Tail short, square, 12 rectrices. Bill short, thick, wide at base, slightly hooked and notched. Rictal bristles obsolete. Plumage soft, silky, head crested. Lores and narrow frontal line including nostrils, covered with dense, short, velvety feathers. Tarsus very short, front scutellate. Three species in subarctic regions of Old and New World, migratory. Nests in trees, open.

Genus BOMBYCILLA Vieill.*

BOMBYCILLA Vieillot, Ois. Amér. Sept., I., p. 88 (1808—Monotype: *B. cedrorum* Vieill.).

Characters and distribution as family. Sexes differ slightly, young striped underneath.

BOMBYCILLA GARRULUS

117. *Bombycilla garrulus* (L.)—THE WAXWING.

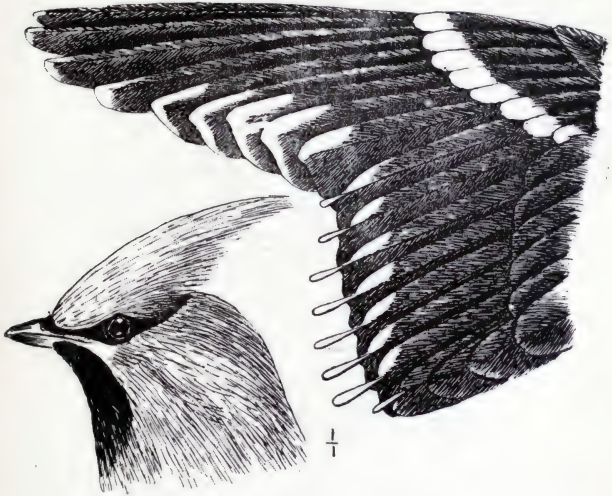
Lanius garrulus Linnaeus, Syst. Nat., ed. x, i, p. 95 (1758—"Habitat in Europa." Typical locality: Sweden).

Ampelis garrulus Linnaeus, Yarrell, I, p. 523; Saunders, p. 155.

DESCRIPTION.—*Adult male*. *Winter*.—Fore-head, lores, stripe over and behind eye black; fore-part of crown chestnut-brown; rest

* In the *Hand-List of British Birds*, p. 53, the generic name *Ampelis* L. has been adopted, its type by elimination being *A. garrulus*; as the latest Rules of Nomenclature do not allow elimination for type-fixing of generic names, we shall have to adopt the name *Bombycilla*.—E.H.

of crown and nape pale pinkish-brown (feathers of centre and back of crown much elongated, measuring 30-35 mm. and forming conspicuous crest); mantle and scapulars darker brown; back pale brownish-grey; rump and upper tail-coverts ash-grey; chin and centre of throat black; short line at base of lower mandible white; sides of throat chestnut-brown; ear-coverts, sides of head, upper-breast and flanks pale pinkish-brown; rest of breast



The Waxwing (*Bombycilla garrulus*), ♂ adult.

and sides of belly pale brownish-grey; centre of belly tinged yellow; under tail-coverts dark chestnut; axillaries and under wing-coverts greyish-white; tail grey at base shading into black with bright yellow tips (6-10 mm.) shafts at tip red and occasionally slightly thickened and with small "wax" tips; primaries black inner webs broadly edged greyish, 2nd with small white spot at tip, 3rd and 4th with white V-shaped margins at tip, 5th same but with side of V on outer web yellowish, rest same but with this side of V bright yellow; secondaries more greyish-black with tip of outer webs white, tips of shafts elongated, flattened and "waxy" bright red,* three innermost secondaries brownish-grey, with no

* The "waxy" tips are formed by the fusion of the shaft of the feather with the tip of its outer vane

white on outer webs and usually without "waxy" tips but sometimes outermost of the three (*i.e.*, 8th) has "waxy" tip (exceptionally "waxy" tips are bright yellow); primary-coverts black, tipped white; rest of wing-coverts brown like mantle. This plumage is acquired by complete moult Oct.-Nov. *Summer*.—No moult and no change by abrasion.

Adult female. Winter and summer.—Like male but mantle and scapulars inclined to be more greyish; chin and throat usually not so intense black; tail with rather paler and narrower yellow tips and without red on shafts; 2nd primary usually without white spot, 3rd with small white spot, rest like those of male, but not so bright yellow and with usually only outer side of the V; secondaries with smaller "waxy" tips than in male on first 7 only and frequently missing on some of these; exceptionally females are indistinguishable from adult males.

Nestling.—Inside mouth patch of violet-blue on each side of palate and lower mandibles, remainder brilliant, deep cherry-red, tongue port-wine colour (W. H. St. Quintin, *Brit. B.*, III, p. 121).

Juvenile.—Whole upper-parts brown, rump and upper tail-coverts paler brown than mantle, feathers of crown slightly elongated; narrow line on fore-head, lores, and over eye black; small patch behind eye whitish; throat, breast and belly brown striated with pale buff; vent whitish-buff; under tail-coverts pale chestnut; tail as adults but duller; primaries and secondaries as adults but browner, tips of primaries without the inner side of V and "wax" tips of secondaries small; primary-coverts black-brown with white tips; rest of wing-coverts as mantle.

First winter and summer. Male.—Like adult male but wing-feathers browner, tips of primaries without inside portion of V, tip of 2nd primary without spot, tips of secondaries with smaller wax tips sometimes missing on some of the feathers and generally absent in 8th but sometimes present in this feather; tips of tail-feathers duller yellow. *Female*.—Like adult, but wing-feathers browner, tips of primaries without inside portion of V, tips of secondaries with smaller "wax" tips frequently absent on some feathers. The juvenile body-plumage and wing-coverts are moulted in autumn but not wing- or tail-feathers. N.B.—Only one specimen in moult from juvenile to first winter and only one in juvenile plumage have been obtainable for examination.

Measurements and structure.—♂ wing 112-120 mm., tail 59-67, tarsus 20-22, bill from feathers on culmen 10-11.5. ♀ wing 112-119. Primaries: 1st minute, about half primary-coverts, 3rd longest, 2nd sometimes as long but usually 1-3 mm. shorter, 4th 1-5 shorter, 5th 11-13 shorter, 6th 16-21 shorter; 3rd and 4th clearly emarginated outer webs. Secondaries between 9th and 10th primaries, tips of inner webs square and of outer somewhat sloped off, tip of shafts elongated, flattened and wax-like. Tail slightly wedge-shaped, tail-coverts long, under ones reaching within 5-10 mm. of

tip of tail. Bill flattish, wide at base, slightly notched at tip. Nostrils almost covered with short, somewhat stiff feathers, a few fine, very short, rectal bristles. Tarsal joint feathered.

Soft parts.—Bill black, flesh at base; legs and feet black; iris dark brown.

CHARACTERS AND ALLIED SPECIES.—No subspecies. *A. cedrorum* (temperate North America) is smaller and has no white and yellow on wing-feathers. *A. japonica* (south-east Siberia, Japan) has red tips to tail, primaries and greater wing-coverts.

FIELD-CHARACTERS.—Its confiding habits allow a close approach when it is feeding on berries in winter, and conspicuous crest, general brown colouring and lemon-yellow tips to tail combined with black chin and white bar on wings are unmistakable. The deep sienna-brown under tail-coverts are also noticeable from below (F.C.R.J.).

BREEDING-HABITS.—Usually in coniferous forest, but sometimes also in birch woods and generally in rather open spaces, with young trees. *Nest*.—Built of spruce twigs, lichens (*Usnea*) and a little grass. Sometimes a little hair or down or a few feathers in lining. *Eggs*.—4 to 6: once 7, ashy-grey or ashy-blue in ground-colour, sometimes very light, with distinct black or blackish-brown spots and grey shell-marks. Average of 100 eggs, 24×17.3 mm. *Breeding-season*.—Apparently from second week of June onward to nearly end of month in Lapland. *Incubation*.—No information.

FOOD.—In British Isles in winter, food consists of berries, hips of dog-rose, berries of mountain-ash, hawthorn, privet, yew and holly, also buds of ash. Insects (chiefly diptera and also ephemeridæ and phryganeidæ) are also eaten in summer; and berries of *Empetrum nigrum*, *Vaccinium uliginosum*, etc., have been found in young.

DISTRIBUTION.—*Great Britain*.—Irregular visitor from Oct. to March, but generally in winter-months, very occasionally April, very rarely May, and twice July (Yorks.). Sometimes occurs in considerable numbers, as in winters 1686, 1834–5, 1849–50, 1866–7, 1872–3, 1892–3, 1903–4, and 1913–14. Most frequent on eastern side. Has occurred in most counties but more rarely in west England and Scotland, and still more rarely in Wales and north Scotland (including Orkneys and Shetlands), and only three times in O. Hebrides. *Ireland*.—Rare and irregular winter-visitor chiefly in east and north. Occasionally in some numbers, as in 1903–4.

DISTRIBUTION.—*Abroad*.—Arctic regions of eastern and western hemispheres. In Europe, north Scandinavia, north Finland, and north Russia. In winter farther south, regularly as far as east Prussia, rarely to Italy.

[NOTE.—The example of the SOUTH AFRICAN BULBUL (*Pycnonotus capensis*, or one of its subspecies) shot near Waterford, Ireland, Jan., 1838, had no doubt escaped from captivity (Yarrell, I, p. 247; Saunders, p. 144)]

FAMILY MUSCICAPIDÆ

(including the so-called *Sylviidæ*, *Turdidæ* and most of the "*Timeliidæ*").

Flycatchers, Warblers, Thrushes and "*Timeliidæ*" form one large family; the supposed sections generally looked upon as families cannot be limited; on the other hand, when uniting such different forms as Flycatchers, Thrushes, Warblers, Chats, etc., it is, of course, more difficult to give a short diagnostic description of this assemblage. All that can be said is, that the *Muscicapidæ*, as here conceived, have the following characters in common:

They are ten-primaried Oscines, varying in size from that of a Thrush to a Chiffchaff. The bill is very variable, thin and pointed, wide and flattened, or like an ordinary Thrush's beak. There are generally some distinct rectal bristles, often strong and well developed, sometimes obsolete. Tail-feathers 12, in a few cases 10. Insectivorous and vermivorous, Thrushes and some Warblers partially frugivorous. Cosmopolitan.

Key to genera of family MUSCICAPIDÆ.

- | | | | |
|-----|---|----|---------------------|
| 1 { | Wing over 110 | 2 | |
| | Wing under 110 mm. | 3 | |
| 2 { | Bill equal to or longer than middle toe with claw, adult male with throat blue | | <i>Monticola</i> |
| | Bill shorter than middle toe with claw, throat never blue | | <i>Turdus</i> |
| 3 { | Outer rectrices cinnamon-rufous with wide, white tip and black subterminal bar | | <i>Agrobates</i> |
| | No wide, white tip to lateral rectrices | 4 | |
| 4 { | Outer rectrices from base to tip and upper tail-coverts chestnut red. | | <i>Phœnicurus</i> |
| | Outer rectrices and upper tail-coverts never chestnut-red or only on basal half. | 5 | |
| 5 { | Axillaries pale lemon-yellow (except in <i>Phylloscopus fuscatus</i> , which, however, has striking buff superciliary line) | 6 | |
| | Axillaries white, grey, buff or brown (mostly without striking buff superciliary line, which, however, is conspicuous in <i>Herbivocula</i>) | 7 | |
| 6 { | Bill wider, more Flycatcher-like, tail-feathers more pointed | | <i>Hypolaïs</i> |
| | Bill narrower, Warbler-like, tail-feathers square | | <i>Phylloscopus</i> |
| 7 { | Ten rectrices | | <i>Cettia</i> |
| | Twelve rectrices | 8 | |
| 8 { | 1st primary about half as long as 2nd | 9 | |
| | 1st primary much less than half as long as 2nd | 10 | |

9	{	Tarsus booted, adult with red throat, young spotted . . .	<i>Erithacus</i>
		Tarsus in front with large scutes, never red on throat, adult and young without spots	<i>Herbivocula</i>
10	{	Outer rectrices chestnut-red at base, or brownish-chestnut throughout	<i>Luscinia</i>
		Outer rectrices without chestnut or brownish-chestnut 11	
11	{	Tail rounded or graduated	12
		Tail square	14
12	{	First primary much longer than primary-coverts . . .	<i>Lusciniola</i>
		First primary shorter or not longer than primary-coverts 13	
13	{	Rictal bristles obvious	<i>Acrocephalus</i>
		Rictal bristles obsolete	<i>Locustella</i>
14	{	Rictal bristles obvious	15
		Rictal bristles obsolete	<i>Sylvia</i>
15	{	Tarsus generally weaker and under 20 mm.	<i>Muscicapa</i>
		Tarsus stronger and over 20 mm.	16
16	{	Upper tail-coverts conspicuously white	<i>Oenanthe</i>
		Upper tail-coverts not white	<i>Saxicola</i>

Genus MUSCICAPA Briss.

MUSCICAPA Brisson, Orn., I., p. 32 (1760—Type by tautonymy: "*Muscicapa*," i.e., *M. striata*; cf. Orn., II., p. 357).

Bill wide at base, wider than half the length of the exposed culmen. Rictal bristles conspicuous. Plumage soft and full. 1st primary in all British species longer than primary-coverts but considerably shorter than half the length of the 2nd, 3rd and 4th longest. Tail square or slightly emarginated, rectrices 12. Feet weak, tarsus short. Sexes alike or different, young in first plumage spotted. Numerous species in all parts of Old World, but genus very differently limited, even British species sometimes divided into three or four genera, e.g., "*Butalis*" (= *Muscicapa* s.s.), *Hedymela* or *Ficedula* (for *hypoleuca*), *Alseonax* (for *latirostris*), *Siphia* (*parva*).

Key to species of genus MUSCICAPA.

1	{	Upper-parts spotted with buff . . .	Juveniles of all species
		Upper-parts not spotted with buff 2	
2	{	Crown with blackish spots . . .	<i>M. striata</i> , ad. and juv. p. 284
		Crown uniform, unspotted . . .	3
3	{	Crown black, white patch on forehead 4	
		Crown brown or brownish-grey . . .	5

4 {	White band on hind-neck . . .	<i>M. albicollis</i> ♂ ad., p. 293
	No white band on hind-neck . . .	<i>M. hypoleuca</i> , ♂ ad., p. 288
5 {	Wing over 75 mm.	<i>M. hypoleuca</i> and <i>M. albicollis</i> , ♀ and juv., pp. 290, 294
	Wing not over 75 mm.	6
6 {	Base of tail brown like rest . . .	<i>M. latirostris</i> , ad. and juv., p. 287
	Base of tail white	7
7 {	Throat rufous	<i>M. parva</i> , ♂ ad., p. 295
	Throat whitish or buff	<i>M. parva</i> , ♀ and juv., p. 296

MUSCICAPA STRIATA.*

118. *Muscicapa striata striata* (Pall.)—THE SPOTTED FLYCATCHER.

MOTACILLA STRIATA Pallas, Vroeg's Cat. Verzam. Vogelen, etc., Adumbratiuncula, p. 3 (1764—Holland).

Muscicapa grisola Linnæus, Yarrell, 1, p. 220; Saunders, p. 157.

DESCRIPTION (Plate 10).—*Adult male and female. Winter.*—Fore-head and crown brown, feathers with blackish centres and pale edges giving spotted appearance; rest of upper-parts uniform dark to greyish-brown, upper tail-coverts with somewhat inconspicuous buff tips; lores and ear-coverts brown; centre of chin and throat white with one or two brown streaks, sides of throat and breast same but much streaked brown; sides of breast and flanks brown tinged cinnamon and with dark brown streaks; centre of belly and under tail-coverts white unstreaked; axillaries and under wing-coverts cinnamon-brown; tail dark brown; primaries dark brown with greyish-white margins to inner webs; secondaries same but also with narrow buff edgings to outer webs; primary-coverts as primaries; greater and median coverts dark brown with buff tips and edgings; lesser coverts brown with slightly paler tips. This plumage is acquired by a moult of the body-feathers July-Sept., but wings, wing-coverts and tail are not usually moulted before migration, although occasionally some secondaries and wing-coverts and rarely central pair of tail-feathers are moulted. The pale edgings to old wing-feathers and wing-coverts are always much worn. *Summer.*—From Nov.-March a complete moult takes place (in winter quarters), new plumage being like old except that pale edgings to secondaries and wing-coverts are broader (*i.e.*, not worn) and more conspicuous. As summer advances upper-parts become greyer brown by abrasion.

* Since the rediscovery of the rare work quoted (only three copies appear to be known, but a reprint has been made of the "*Adumbratiuncula*") its new names have been adopted, and under these circumstances *striata* of 1764 antedates *grisola* of 1766.—E.H.

Nestling.—Down sooty-grey, moderately long but rather scanty, especially on femoral tract. Distribution outer and inner supra-orbital, occipital, humeral, ulnar, spinal, femoral. Mouth inside orange-yellow, no spots, externally flanges whitish-yellow.

Juvenile.—Whole upper-parts brown with large pale buff spots, each feather having pale buff centre and narrow dark brown margin; upper tail-coverts with smaller and more rufous buff spots and tips; chin and throat buffish-white with faint sooty-brown tips; breast and flanks buffish-white, each feather margined dark brown, giving spotted appearance rather than streaked as adult; centre of belly and under tail-coverts white; axillaries cinnamon-buff; primaries, primary-coverts and secondaries as in adults but edgings to latter usually more rufous; greater coverts dark brown with rufous-buff edgings and with small rufous-buff spots at tip of inner feathers; median coverts with larger and paler buff spots at tips; lesser coverts with pale buff centres and dark brown margins as rest of feathers of upper-parts.

First winter.—Like adults, but always to be distinguished by broader pale edgings to secondaries and spots at tips of greater coverts; also a few juvenile body-feathers sometimes retained. The juvenile body-feathers, lesser and median wing-coverts and innermost secondaries and greater coverts are moulted July-Sept., but not tail-feathers nor primary-coverts nor rest of wing-feathers nor greater wing-coverts. *First summer*.—A complete moult takes place as in adults but rather later, extending until April (exceptionally May). New plumage indistinguishable from adults.

Measurements and structure.—♂ wing 81–89 mm., tail 58–63, tarsus 13.5–16, bill from skull 13–14 (12 measured). ♀ wing 80–89. Primaries: 1st equal to or 1–5 mm. longer than longest primary-covert, 3rd and 4th longest, 2nd and 5th 2–5 mm. shorter, 6th 9–13 shorter; 3rd and 4th clearly, and 5th slightly, emarginated outer webs. Secondaries between 9th and 10th primaries, tips almost square. Tail almost square, central pair of feathers slightly shorter than rest. Bill flat and broad at base, tapering gradually to fairly sharp point, upper mandible slightly hooked at tip. Nostrils half covered with short feathers and some fine, short bristles. A few long and fairly strong rictal bristles. Tarsal joint feathered in front but bare at back.

Soft parts.—Bill black-horn, base of lower mandible brownish flesh; legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*M. s. neumanni* (West Siberia to Baluchistan) is paler and often slightly longer in wing, and other forms have been described. Spotted crown and streaked breast distinguish this species from other British Flycatchers.

FIELD-CHARACTERS.—Unobtrusively grey in colour, but unmis-

takable in pose and action. Constant habit is to perch on dead twig, fence-rail or some similar point of vantage, with head withdrawn between shoulders, so that it appears to stoop. At frequent intervals it makes a short sally in the air, captures an insect with an audible snap, and returns, almost invariably to same perch. Song weak and low, a rambling repetition of the squeaky call-note. Alarm-note "egyp."

BREEDING-HABITS.—Nests generally against wall or resting on beam; often supported by branch of fruit-tree, but sometimes in hole. Also frequently built against tree-trunk. Will also nest on hinge of door or in old nests of many other species of birds. *Nest.*—Slightly built of moss, wool and hair, compacted with cobwebs. *Eggs.*—4-5, rarely 6, ground greenish-grey, occasionally pale bluish-green, with spots of sienna-brown of varying depth, chiefly round big end, sometimes forming a rich red-brown cap. A type with pale blue ground and no markings also occurs. Average of 100 eggs, 18.3×13.8 mm. *Breeding-season.*—About third week May. Two broods occasionally reared. *Incubation.*—Lasts $12\frac{1}{2}$ -13 days (W. Evans) by both sexes.

FOOD.—Almost entirely insects; chiefly diptera, but also lepidoptera, hymenoptera (*Bombus*, *Vespa*, etc.), orthoptera and coleoptera. Has been known to take earthworm in hard weather, and is said to take berries, such as those of rowan, in autumn.

DISTRIBUTION.—*British Isles.*—Summer-resident. Generally distributed except in O. Hebrides, where only two vagrants (Flannans, June 14, 1905, and Sept. 23, 1909); in north Sutherland and in Caithness, where it breeds rarely, but occurs as migrant; in Orkneys, where bred for a year or two about 1867 and two pairs in 1917, but otherwise known only as occasional visitor, as in Shetlands; in Fair Isle recorded on both migrations, but chiefly from late May to mid-June.

MIGRATIONS.—*British Isles.*—Early arrivals from April 10 onward, (early dates March 10, April 3). Main arrival of summer-residents from first to third week May. Passage-migration second week May to mid-June. Departure of summer-residents begins first week Aug. and lasts to about end Sept. Passage-migration from mid-Sept. (Fair Isle), though possibly as early as mid-Aug., to first few days Oct. Late dates Oct. 6 and 31.

DISTRIBUTION.—*Abroad.*—Breeds in Europe from Archangel and Tromsö to Mediterranean and in Atlas Mountains in north-west Africa. Winters in central and south Africa. Casual Madeira: on passage Canaries. Replaced by very closely-allied forms in west Asia, Corsica and Mallorca.

MUSCICAPA LATIROSTRIS

119. *Muscicapa latirostris* Raffl.—THE BROWN FLY-CATCHER.

MUSCICAPA LATIROSTRIS Raffles, Trans. Linn. Soc. London, XIII, 2, p. 312 (1822—Sumatra).

Alseonax latirostris Raffl., Nicoll, Bull. B.O.C., XXIII, p. 93; *Muscicapa latirostris*, id., Brit. B., III, p. 112.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole upper-parts uniform brown to grey-brown; lores and narrow circle round eye dull white; ear-coverts and sides of chin and throat brown, with a whitish streak below base of under mandible; centre of chin and throat white; breast and flanks with centres of feathers pale grey-brown and edges whitish, giving sometimes a slightly streaked appearance; centre of belly and under tail-coverts white; axillaries pale buff; tail dark brown; primaries dark brown, inner webs edged pale buff; secondaries same but outer webs also narrowly edged buff to whitish; primary-coverts dark brown; greater coverts dark brown very narrowly edged greyish; median and lesser coverts brown with greyish-brown tips. This plumage is acquired by a moult of the body-feathers in July-Aug., but the wings, wing-coverts and tail are not moulted in autumn. *Summer.*—From Feb. to May a complete moult takes place, new plumage being like old except that tail-feathers usually have small greyish-white tips. As summer advances upper-parts become greyer-brown by abrasion.

Nestling.—(Not examined.)

Juvenile.—Like adult, but most feathers of upper-parts with pale buff spots at tip and feathers of under-parts with dusky tips, wing-coverts and inner secondaries with pale buff tips. N.B.—The correct identification of the few juvenile specimens available seems uncertain.

First winter.—Like adults, but always to be distinguished by broader and more clearly defined pale buff or whitish edgings and tips to greater coverts and in fresh plumage by similar margins to inner secondaries. The juvenile body-plumage, lesser and median wing-coverts are moulted in Aug.-Sept., but apparently not rest of wings nor tail. *First summer.*—The body-plumage is again moulted Feb.-May, but apparently not wings, greater wing-coverts and tail. Pale tips of greater coverts become much worn in summer, but one or two are usually distinguishable.

Measurements and structure.—♂ wing 67–74 mm., tail 45–51, tarsus 12.5–14, bill from skull 10.5–12 (12 measured). ♀ wing 67–74. Primaries: 1st 1–5 mm. longer than longest primary-covert, 3rd and 4th longest, 2nd 5–7 shorter, 5th 2–3 shorter, 6th 8–10 shorter; 3rd and 4th distinctly, 5th slightly, emarginated outer webs.

Other structure as in *M. s. striata*, but bill, although shorter, wider at base.

Soft parts.—Bill black, proximal part of lower mandible yellow; legs and feet black; iris dark brown.

CHARACTERS.—No subspecies. In general appearance resembling Spotted Flycatcher but much smaller, and with no spots on crown and with no distinct streaks on breast. "White circle round eye conspicuous in life." (H. Lynes).

BREEDING-HABITS.—Nests on horizontal boughs of trees, close to trunk. *Nest*.—A neat, lichen-covered cup. *Eggs*.—4 or 5, occasionally 6, light grey-green, sometimes unmarked or washed with light red. Average of 23 eggs, 16.7×12.7 mm. *Breeding-season*.—From May 10 onward in Japan: June in Siberia.

FOOD.—Probably entirely insects, but little information available. Lynes records orthoptera (grasshoppers) and beetles, as well as other winged insects in stomach.

DISTRIBUTION.—*England*.—One, a male, near Lydd (Kent), May 21, 1909 (*ut supra*).

DISTRIBUTION.—*Abroad*.—East Siberia, from Lake Baikal to Corea, Japan, also northern parts of China and eastern Himalayas. In winter in India, Ceylon and other islands east to the Greater Sunda Islands and Philippines.

MUSCICAPA HYPOLEUCA*

120. *Muscicapa hypoleuca hypoleuca* (Pall.)—THE PIED FLYCATCHER.

MOTACILLA HYPOLEUCA Pallas, in Vroeg's Cat. Verzam. Vogelen, etc., *Adumbratiuncula*, p. 3 (1764—Holland).

Muscicapa luctuosa MacGillivray, Hist. Brit. B., III, p. 524.

Muscicapa atricapilla Linnaeus, Yarrell, I, p. 229; Saunders, p. 159.

DESCRIPTION.—*Adult male*.—*Winter*. Fore-head, mantle, scapulars and back brown, feathers of fore-head usually with white or creamy bases, but not always; rump as back, or mixture of black and brown, if black feathers present most with brown tips; upper tail-coverts black, some of the shorter ones with brown tips; lores and ear-coverts brown, somewhat mottled black-brown; feathers round eye pale brown; chin, throat, breast and flanks pale creamy-buff, many feathers tipped dusky; centre of belly and under tail-coverts white; axillaries creamy-white to cream with dusky bases; tail black to black-brown, outer pair with whole or most

* As Linnaeus's name *atricapilla* dates from 1766, Pallas's name *hypoleuca* has priority, and must therefore be adopted.—E.H.

of outer webs white or creamy-white and often some white on inner web, especially on basal portion, next pair usually with most of outer web (and sometimes part of inner web at base) white or



The Pied Flycatcher (*Muscicapa h. hypoleuca*) ♂ adult, summer.

creamy but sometimes without any white, third pair from outside usually without but sometimes with white on outer webs ; primaries brown-black to dark brown, inner webs narrowly edged whitish, 6th to 10th (and 5th occasionally) with varying amount of white at bases usually showing just beyond primary-coverts ; secondaries with larger patch of white, or more usually cream-colour, at base, three innermost with white, or creamy-white, margins of varying width on outer webs and the two longer ones with most of their bases white or creamy, occasionally 6th has narrow white margin ; primary-coverts brown-black to dark brown ; greater coverts same with varying amount of pale brown to white on outer webs and tips, especially of inner feathers ; median and lesser coverts usually brown (sometimes black) with paler brown tips. N.B.—There is considerable individual variation, especially in rump, wings and tail. This plumage is acquired by complete moult in July-Aug. *Summer*.—Most body-feathers, three (occasionally four) innermost secondaries, inner greater coverts (outer very seldom) and sometimes some median and lesser coverts are moulted early in year but not rest of wings or tail. Feathers over nostrils black ; fore-head white, varying in extent ; rest of upper-parts glossy black, with varying number of new feathers brown or partially brown and always some old brown winter feathers unmoulted, especially on back and rump ; whole under-parts white ; innermost secondary black with wide white margin on outer web, next two mostly white with black on distal half of inner webs, 6th when renewed with basal third white and rest black ; new greater coverts varying from

white with black bases to black with white tips ; median, when renewed, black occasionally with white tips ; lesser coverts, when renewed, black.

Adult female. Winter.—Like adult winter male but fore-head brown or creamy, never with white ; rump brown, never black ; upper tail-coverts usually brown, but sometimes black with brown tips ; tail dark brown, never so black as in some males. Moults apparently as male. *Summer.*—Moults apparently as male. As winter, but inner secondaries with more white and under-parts rather more whitish.

Nestling.—Down dark grey, scanty. Distribution inner supra-orbital, occipital, humeral and spinal. Mouth inside orange-yellow, no tongue spots, externally flanges pale yellow. (C. B. Ticehurst, *Brit. B.*, III, p. 152.)

Juvenile.—Upper-parts dark brown with a pale buff spot at tip of each feather ; upper tail-coverts black-brown ; under-parts buffish-white, each feather slightly tipped dusky-black, giving a spotted appearance ; tail, primaries, secondaries and greater coverts as adult winter ; median coverts brown with small buffish-white tips ; lesser coverts brown with pale buff spots at tip.

First winter. Male.—Very similar to adult winter male but usually distinguishable by whitish tips to some median coverts and often by one or two juvenile feathers with spots at tip, pale margins of inner secondaries usually broader, especially at apex, than in adult winter. Feathers of fore-head brown or dark cream-colour, apparently never with white. N.B.—Some first winter males have tail-feathers and rump black and wing-feathers very dark, and in these respects vary as adult males. The juvenile body-feathers and lesser wing-coverts are moulted in July-Aug., but not rest of wing-coverts nor wing-feathers or tail. *First summer.*—Moults apparently as in adults. Upper-parts mixture of black or greyish-black and brown, and usually with less white on fore-head and sometimes less pure white on breast than adult male ; wing-feathers more worn and browner than adult. Occasionally examples though moulted are much as in winter, having scarcely any black or blackish feathers on upper-parts and many dusky-buff feathers on throat and breast.

First winter. Female.—Moults as in male. Plumage as adult winter female, but usually distinguishable (as in male) by somewhat broader margins to inner secondaries and whitish tips to median wing-coverts. *First summer.*—Moults as in male. Apparently indistinguishable from adult female.

Measurements and structure.—♂ wing 76–82 mm., tail 49–54, tarsus 16.5–18, bill from skull 10–11 (12 measured). ♀ wing 75–80. Primaries : 1st 2–4 mm. longer than longest primary-covert, 3rd and 4th longest, 2nd 4–7 shorter, 5th 2–5 shorter (5th usually longer and never shorter than 2nd, but occasionally equal), 6th 8–10

shorter ; 3rd to 5th emarginated outer webs. Secondaries slightly shorter than 10th primary, tips almost square. Bill and other structure as in Spotted Flycatcher.

Soft parts.—Bill, legs and feet black ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—Male of *M. h. speculigera* (Tunisia, Algeria) has more white at bases of 5th to 10th primaries and also 2nd to 4th, outer tail-feathers with no white or very little, and in summer fore-head spot is larger and white on inner secondaries and greater wing-coverts more extensive ; male of *M. h. semitorquata* (Greece, Asia Minor, Persia) is much like last, but outer tail-feathers with much more white than in *M. h. hypoleuca*. For differences of *M. albicollis* see under that species. Distinguished from other British Flycatchers by absence of streaks on breast and by white margins of secondaries.

FIELD-CHARACTERS.—Coloration and strongly contrasted black and white plumage of male render him conspicuous. Habits differ in several respects from Spotted Flycatcher. It seldom, if ever, returns to same twig after darting out to catch an insect on the wing, but usually alights on different branch and often on ground or another tree. At times it clings, tit-like, to a tree-trunk for an instant, and often feeds on ground. Occasionally it hovers beneath a leaf to pick off an insect. Call-note is a sharp "whit," very like spring note of Chaffinch. Song bearing some resemblance to Redstart's, but more broken, is uttered sometimes from perch, and at others during flight from tree to tree, but always with great deliberation. Alarm-note "p'weet."

BREEDING-HABITS.—Breeds in holes of trees or buildings, sometimes close to ground, but also up to 20 ft. Old Woodpeckers' holes occasionally used. Generally near water. *Nest*.—Loosely built of strips of honeysuckle bark, moss, bents and roots, lined hair, and sometimes bits of wool or feathers. *Eggs*.—5 to 7, occasionally 8, while 9 have been recorded ; delicate pale blue. Continental specimens very occasionally show fine brownish spots. Average of 100 eggs, 17.3×13.4 mm. *Breeding-season*.—Seldom before mid-May, often not till last week. *Incubation*.—Lasts 12-13 days by hen only.

FOOD.—Chiefly insects, larvæ and imagines (diptera, coleoptera, orthoptera, larvæ of lepidoptera, and hymenoptera, especially ants). Newstead records many acarids (Oribatidæ). Said to have been seen searching for worms on ground, and also to take berries in autumn.

DISTRIBUTION.—*England and Wales*.—Summer-resident. Breeds regularly in considerable numbers north and central Wales ; very small numbers Devon and Salop ; locally north Lanes. ; more commonly Westmorland and Cumberland ; exceptionally Lines. ; locally north and west Ridings of Yorks. and in Durham and Northumberland. Has also bred exceptionally in many other

counties, including some southern ones. *Scotland*.—Breeds very locally in Dumfries, and has bred exceptionally in Kirkcudbright, Ayr., Midlothian, Haddington, Roxburgh, Peebles, and Inverness. *Ireland*.—Vagrant. Fourteen occurrences. One co. Sligo, one Maidens' Light (co. Antrim), one Rockabill Light (co. Dublin), five Tuskar Light (Wexford), four Fastnet Light (Cork), one Ballycotton Light (Cork), one Tearaght Light (Kerry); two April, rest autumn.

MIGRATIONS.—*Great Britain*.—Early arrivals second week April (early dates March 26, April 3). Main arrival of summer residents, last week April to mid-May. Passage-migration first week May to first week June. Departure of summer-residents begins mid-Aug. at same time as passage-migration, and the two movements cannot at present be separated, passage lasts until first few days Oct. (late date Oct. 16.) As passage-migrant autumn and spring in considerable numbers, especially autumn, along east coast from Yorks. to Kent. North of Yorks., and especially in north Scottish mainland more irregular, though passing through Orkneys fairly commonly and noted both passages in Fair Isle, but much more rarely Shetlands. In most other English counties and in south and east Scotland recorded as occasional straggler (probably regular passage-migrant in May, especially south coast counties, though generally overlooked), generally in May, but seems particularly rare as migrant Cornwall and Devon, though noted with some regularity Somerset, and nearly every autumn at St. Catherine's Light (Isle of Wight). As yet uncertain by what routes our breeding-birds reach their quarters. In west Scotland (except Dumfries. and Kirkcudbright) only recorded once or twice, and in O. Hebrides rare vagrant in autumn.

DISTRIBUTION.—*Abroad*.—Europe from lat. 69° or 70° north in Scandinavia, and from 65° in Finland and 60° in Russia to Spain, and central Italy. In east apparently to Urals, south-west to Austria. In winter in Africa. Casual Madeira; passage migrant Canaries. Replaced by other races in north-west Africa, Caucasus Asia Minor, Persia, and Greece.

MUSCICAPA ALBICOLLIS

121. *Muscicapa albicollis* Temm.—THE COLLARED FLY-CATCHER.

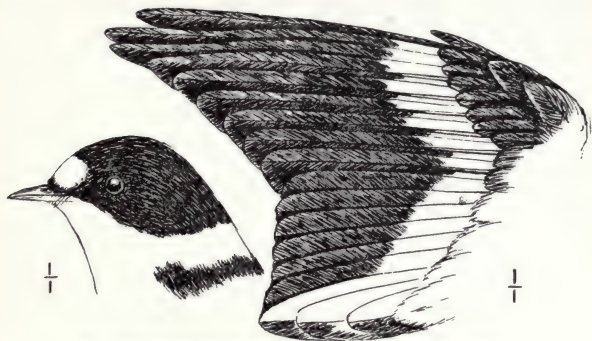
MUSCICAPA ALBICOLLIS Temminck, Man. d'Orn., p. 100 (1815—New name for *M. collaris*).

*Muscicapa collaris** Bechstein, Gemeinn. Nat. Deutschl., iv, p. 495 (1795—Europe and Germany: Thüringerwald); Hand-list B.B., p. 55 (1912)

Muscicapa collaris Bechst., J. B. Nichols, Brit. B., v, p. 238.

* *Muscicapa collaris* Bechstein, 1795, is preoccupied by Latham's *M. collaris* of 1790, which referred to an African bird.

DESCRIPTION.—*Adult male. Winter.*—Portions of upper-parts which are black in summer replaced by brown; apparently considerably less white on collar and back and rump; innermost



The Collared Flycatcher (*Muscicapa albicollis*). ♂ adult, summer.

secondaries darkish brown with less white than in summer; wing-coverts apparently brown and inner greater coverts grey-brown with only a little white on outer webs. Only one partially moulted specimen available for examination. *Summer.*—No moulting specimen examined, but moult appears to be same as in *M. h. hypoleuca*. Feathers over nostrils black; fore-head and fore-part of crown (circular shape) white varying somewhat in extent but much larger than in *M. h. hypoleuca*; rest of crown jet-black; broad collar round nape white; mantle, lower part of rump and upper tail-coverts jet-black; back and upper-part of rump greyish-white; lores, ear-coverts and round eye black; under-parts white; axillaries white with dusky-black bases; tail jet-black, outermost pair of tail-feathers often with some white (varying in extent) on outer webs and penultimate pair sometimes with a little white on outer webs; primaries black, 2nd with base of inner web only white, rest with bases of both webs white showing 10–15 mm. beyond primary-coverts; secondaries same with white showing just beyond greater coverts, 6th with white extending further towards tip on outer web, three innermost with outer webs white and usually part of inner webs white; primary-coverts black; outer two or three greater coverts black, rest white with black bases; median and lesser coverts black with sometimes a few brown winter ones remaining. *N.B.* Upper-parts are more uniform jet-black than in *M. h. hypoleuca* and apparently never have an admixture of brown or greyish feathers.

Adult female. Winter and summer.—Like that of *M. h.*

hypoleuca but rather greyer on upper-parts and the feathers of back of neck and upper rump with white bases concealed in fresh plumage but showing here and there when worn; 2nd to 5th primaries with white at base of inner webs and 3rd to 5th usually with white at base of outer webs also, rest of primaries with more white showing at base than in *M. h. hypoleuca*; tail as in *M. h. hypoleuca*. Moults probably as in *M. h. hypoleuca* but no specimens in moult examined.

Nestling and juvenile.—(Not examined.)

First winter. Male.—No specimen available for examination.

Summer.—No moulting specimen examined. Like adult, but mantle and scapulars not so jet-black, usually with some brownish or greyish feathers on upper-parts; nuchal band sometimes mixed with grey and indistinct; white fore-head spot varying in size as in adult; primaries much browner than in adult, 2nd to 4th usually with only inner webs white at base and only occasionally outer webs with white, 5th sometimes with no white on outer web, rest with less white than in adult (showing only 5 mm. or less beyond coverts); secondaries brown as primaries except innermost four (exceptionally five) which are newly moulted and like adults; primary-coverts and outer greater-coverts old and brown, rest new and like adult; tail as adult.

Measurements and structure.—♂ wing 80–85 mm., tail 49–54, tarsus 16–18, bill from skull 9.5–11 (12 measured.) ♀ wing 78–82. Primaries: 1st equal to or 1–3 mm. longer than longest primary-covert, 3rd and 4th longest, 2nd 2–6 shorter, 5th 4–6 shorter (5th equal to or shorter than 2nd, in one specimen shade longer), 6th 10–12 shorter; 3rd to 5th emarginated outer webs. Secondaries slightly shorter than 10th primary, tips almost square. Other structure as in Spotted Flycatcher.

Soft parts.—Bill, legs and feet black; iris dark brown.

CHARACTERS.—No subspecies. Summer males easily distinguished from forms of *M. hypoleuca* by white collar, females can usually be distinguished by white bases to feathers of nape and by short 5th primary, and from *M. h. hypoleuca* by more white on primaries.

BREEDING-HABITS.—Similar to those of Pied Flycatcher, breeding in holes, generally in old trees. *Nest*.—Also of bark strips, bents, etc. *Eggs*.—5 to 7, pale-blue, unmarked. Average of 45, 17.2 × 13.3 mm. *Breeding-season*.—From early May (Carinthia) to early June (Gotland.) *Incubation*.—By hen only.

FOOD.—Probably almost entirely insects (diptera, lepidoptera, etc.) but information scanty. Said to take berries also.

DISTRIBUTION.—England.—Four. Two males near Winchelsea (Sussex), one May 12, one May 13, 1911 (*ut supra*). Two males Hollington, near St. Leonard's (Sussex) May 15th, 1916 (J. B. Nichols, *Brit. Birds*, X., p. 166).

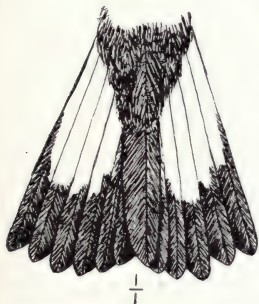
DISTRIBUTION.—*Abroad.*—Island of Gotland in Baltic, Austrian Poland, Austria, Hungary, south Russia, south Germany (locally common in Bavaria), parts of middle, and very rare north, Germany, south-east Europe generally, but in Greece apparently only migrant, very local France, Belgium, Holland, also Italy; occurs (generally in April) in Corsica, Cyprus and Spain. On passage in most parts of Europe, Persia, Asia Minor, Palestine, Egypt, north-west Africa, winter-quarters probably in central Africa.

MUSCICAPA PARVA

122. *Muscicapa parva parva* Bechst.—THE RED-BREASTED FLYCATCHER.

MUSCICAPA PARVA Bechstein, Latham's allg. Uebers. d. Vögel, II, 1, p. 356 fig. on title-page (1794—Thüringerwald).

Muscicapa parva Bechstein, Yarrell, I, p. 224; Saunders, p. 161.



The Red-breasted Flycatcher (*Muscicapa p. parva*), showing white base of tail.

DESCRIPTION.—*Adult male. Winter.*—Fore-head and crown brown tinged greyish; rest of upper-parts brown; upper tail-coverts brown-black tipped greyish-brown; ring round eye whitish; lores, under eye and ear-coverts ashy-grey tinged brown; sides of neck purer ashy-grey; chin, throat and upper-breast orange-red (varying somewhat in depth and occasionally buffish-red); sides of breast, flanks and axillaries creamy-buff; under tail-coverts white slightly tinged creamy; rest of under-parts white; tail brown-black, three outer-pairs with about basal two-thirds white, next pair with middle portion of outer web and part of inner

web white, two central pairs generally without white but second sometimes with some white on outer webs; primaries and secondaries dark brown, outer webs narrowly edged paler brown and inner webs edged whitish; all wing-coverts dark brown with rather paler brown inconspicuous edgings. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—The feathers of chin, throat and breast, crown and some of the other body-feathers are moulted in Feb.-April but not tail, wings or wing-coverts. New feathers like those of winter. Abrasion makes fore-head and crown more greyish; lores and ear-coverts purer ashy-grey; red of throat more yellowish; sides of breast and flanks more whitish less creamy-buff.

Adult female. Winter.—Like adult male but fore-head

and crown brown without greyish tinge; lores buffish-white, ear-coverts and sides of neck pale brown; chin, throat and upper-breast cream-buff to tawny-buff, indistinctly flecked brown. Moults as male. *Summer*.—Moults as male. Abrasion makes crown paler brown and under-parts whiter, not so buff.

Nestling.—(Not examined.)

Juvenile.—Feathers of upper-parts, including lores and ear-coverts, with rufous-buff centres and narrow dark brown edgings giving a spotted appearance; rump paler than rest of upper-parts; chin and throat pale buff, slightly flecked brown; breast deeper and more yellowish-buff, most of the feathers lightly tipped dusky-brown; flanks yellowish-buff; belly and under tail-coverts white; tail as adult; wing-feathers as adult but innermost secondaries with small rufous-buff spots at tip; greater and median coverts with larger buff spots at tip.

First winter. Male and female.—Like adult winter female but with buff spots at tips of innermost secondaries, greater coverts and occasionally some inner median coverts. The juvenile body-feathers, lesser and most median wing-coverts are moulted in Aug., but not tail- or wing-feathers or rest of wing-coverts. *Summer*.—Moults as adults after which like adults except for traces of buff tips to inner secondaries and wing-coverts and in male red of breast is apparently usually less extensive.

Measurements and structure.—♂ wing 66–71 mm., tail 49–55, tarsus 17–18, bill from skull 9.5–10.5 (12 measured). ♀ wing 64–70. Primaries: 1st 3–6 mm., shorter than longest primary-covert, 3rd and 4th longest, 2nd 6–8 shorter, 5th 1–2 shorter, 6th 3–6 shorter; 3rd to 5th emarginated outer webs. Secondaries slightly shorter than 10th primary, tips almost square. Bill and other structure as in Spotted Flycatcher.

Soft parts.—Bill brown; legs and feet dark brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—In *M. p. albicilla* (eastern Siberia, Kamtschatka) adult male has red restricted to chin and throat, upper-breast being grey, and female and first winter male have chin whiter and throat and breast browner, less yellowish-buff than in *M. p. parva*; *M. p. hyperythra* (Kashmir) is darker. Uniform brown of upper-parts and white bases of tail-feathers distinguish it from other British Flycatchers.

FIELD-CHARACTERS.—White base of tail and small size apart from orange-red throat of adult male should be easily observable characteristics. It is shy and secretive, but has the habits of a true Flycatcher. The song is very varied. Fine bell-like notes, “tink, tink, tink—ida, ida,” are frequent, as well as a flute-like “diu, diu, diu,” often connected with whirring passages. Call-note is reminiscent of notes of Wren or Mistle-Thrush but less loud. (E.H.)

BREEDING-HABITS.—Haunts beech forest, breeding sometimes in holes, but also against tree-trunk often 15 to 20 ft. high, but occasionally quite low down. Nests have also been recorded from holes in rock, in stump, and in side of stack. *Nest.*—Small, built of moss, stalks, and a few twigs, lined hair and interwoven with cobwebs. *Eggs.*—5–6, rarely 7, like very small eggs of Red-breast, very pale bluish-green freckled rusty-brown. Average of 100 eggs, 16.6×12.7 mm. *Breeding-season.*—Early June. Single brooded.

FOOD.—Insects, chiefly taken on the wing: small coleoptera, small lepidoptera, diptera (especially *Culicidæ*), and larvæ of various insects, etc.

DISTRIBUTION.—*British Isles.*—Irregular passage-migrant, chiefly Sept. and Oct., but occasionally Nov., and once Jan. (Cornwall). *England.*—Twenty obtained and others seen; Sussex, one; Norfolk, eleven and two others seen; Lincs., one; Yorks., two and three others said to have been seen; Northumberland, one; Cornwall, one and another seen; Scilly Isles, three. *Scotland.*—Fifteen obtained and others seen:—Fair Isle, five and others seen; Orkneys, four; O. Hebrides, one and two seen; Bell Rock (Fife), one; Isle of May (Forth), four. *Ireland.*—Five obtained at Lights:—Wexford, two; Cork, one; Kerry, one; Donegal, one.

DISTRIBUTION.—*Abroad.*—Breeds in Europe from Petrograd, Rügen, and Denmark to Alps, apparently eastwards to west Siberia. On migration occasionally in south Sweden, more often in Heligoland, Holland and elsewhere in west Europe. In winter in western parts of India; also observed at Cairo, and will probably be found in winter in parts of tropical Africa. Casual Malta and Canaries. Replaced by other races in east Siberia, and Himalayas.

Genus PHYLLOSCOPUS Boie.

PHYLLOSCOPUS Boie, Isis, 1826, p. 972—(Type: only species mentioned: *Ph. trochilus*).

Beak shorter than head, thin and pointed, sometimes wider, somewhat more Flycatcher-like. Rictal bristles always present, but sometimes very small. Wings more or less pointed, in most cases 3rd and 4th primaries longest, but sometimes 4th and 5th, or 3rd to 5th almost equal and longest. Tail with 12 rectrices, square, slightly emarginated. Tarsus booted, though one scale separated at base, feet generally weak. Upper-parts, or at least outside of wings, greenish, except in *P. fuscatus*, where it is brown though with a slight greenish tinge, under-parts whitish, yellowish, or white. Sexes alike, young not obviously different. Inhabitants

of wooded places, but nests mostly on or near ground, more or less fully domed. Eggs white, spotted with rufous or deep brown, or uniform. Numerous species in Europe and Asia south to New Guinea, in Africa south of Atlas only in winter.

Key to species of genus PHYLLOSCOPUS.

- | | | |
|-----|--|--------------------------------|
| 1 { | Under wing-coverts light brownish-buff | <i>Ph. fuscatus</i> , p. 318 |
| | Under wing-coverts more or less lemon-yellow 2 | |
| 2 { | 1st primary stiff, narrow, pointed, shorter or at least not distinctly longer than primary-coverts 3 | |
| | 1st primary less narrow and pointed, distinctly longer than primary-coverts 4 | |
| 3 { | 2nd primary longer than 5th, under tail-coverts white | <i>Ph. sibilatrix</i> , p. 309 |
| | 2nd primary shorter than 5th, under tail-coverts yellowish | <i>Ph. borealis</i> , p. 312 |
| 4 { | Yellowish or pale line along crown 5 | |
| | No yellowish or pale line on crown 6 | |
| 5 { | Light yellow band across rump | <i>Ph. proregulus</i> , p. 316 |
| | No yellow band across rump | <i>Ph. humei</i> , p. 314 |
| 6 { | Yellowish tips to greater upper wing-coverts | <i>Ph. nitidus</i> , p. 307 |
| | No yellowish tips to greater upper wing-coverts 7 | |
| 7 { | Outer web of 3rd to 5th primaries emarginate | <i>Ph. trochilus</i> , p. 304 |
| | Outer web of 3rd to 6th primaries emarginate | <i>Ph. collybita</i> , p. 298 |

PHYLLOSCOPUS COLLYBITA *

123. *Phylloscopus collybita collybita* (Vieill.)—THE CHIFF-CHAFF.

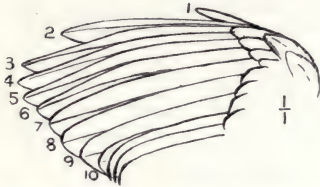
SYLVIA COLLYBITA Vieillot, Nouv. Dict. d'Hist. Nat., nouv. éd., xi, p. 235 (1817—France).

Phylloscopus collybita (Vieillot), Yarrell, I, p. 437; *Phylloscopus rufus* (Bechstein), Saunders, p. 67.

DESCRIPTION (Plate 11.)—*Adult male and female. Winter.*—Whole upper-parts varying from brownish olive-green to brown tinged with olive-green (rump usually slightly more greenish than rest of upper-parts); lores blackish, feathers tipped buffish,

* The name "*rufus*" has been erroneously used for the Chiffchaff. It was first introduced by Gmelin, but his *Motacilla rufa* does not refer to a *Phylloscopus* at all. The first certain name is *collybita*.—E.H.

yellowish or whitish ; ear-coverts brown marked buffish or yellowish ; circle round eye pale yellow or white ; narrow line from base of bill, over and behind eye pale yellow, part behind eye being usually



The Chiffchaff (*Phylloscopus c. collybita*). Note short 2nd primary and emarginated 6th primary.



The Willow-Warbler (*Phylloscopus t. trochilus*). Note longer 2nd primary than in Chiffchaff, and 6th primary not emarginated.

pale buff ; chin, throat, breast and flanks whitish tinged buff to pale buff streaked with varying amount of lemon-yellow ; centre of belly whiter less buff ; under tail-coverts rather more yellow ; under wing-coverts and axillaries bright lemon-yellow ; tail-feathers dark brown, outer webs edged olive-green ; primaries and secondaries dark brown, outer webs edged olive-green and inner webs edged greyish-white ; all wing-coverts dark brown edged and tipped olive-green. This plumage is acquired by complete moult July to early Sept. *Summer*.—The body-plumage, and often (probably not always) wing-coverts, remiges and rectrices, are moulted in Jan.-Feb., and occasionally March or early April. New plumage like winter. By June abrasion makes upper-parts browner, less greenish, and under-parts whiter less buff.

Nestling.—Down, darkish-grey, rather short and scanty ; distribution, inner supra-orbital, occipital and humeral. Mouth, inside dull yellow, no spots, externally flanges pale yellow.

Juvenile.—Much like adult but upper-parts browner less green ; under-parts yellowish-white, washed smoke-brown on throat and more heavily on breast, not buffish as in adult. (*N.B.*

Upper-parts darker than juvenile Willow-Warbler, throat and breast more smoky, belly whiter and less yellow, axillaries deeper yellow.)

First winter.—Like adult and not to be distinguished. The juvenile body-feathers and wing-coverts are moulted Aug.-Sept., but not primary-coverts nor wing- or tail-feathers, and apparently not outer greater coverts.

Measurements and structure.—♂ wing 56-63 mm., tail 47-52, tarsus 19-21, bill from skull 9.5-11 (20 measured). ♀ wing 52-59. Primaries : 1st 5-9 mm. longer than longest primary-covert, 3rd to 5th usually equal and longest but 3rd and 5th occasionally 1 shorter than 4th, 6th 1-3 shorter, 7th 4-6 shorter, 2nd usually between 7th and 8th, occasionally as long as 7th or as short as 9th ; 3rd to 6th emarginated outer webs. Secondaries slightly shorter than 10th primary, tips rounded. Tail nearly square, each feather sloped off on inner web. Bill fine. A good many very fine rictal bristles. Nostrils partially covered with short feathers. Tarsal joint feathered.

Soft parts.—Bill blackish-brown, yellowish-brown at base of lower mandible ; legs and feet dark brown ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *Ph. c. abietinus* and *tristis* see under those forms. *Ph. c. canariensis* (western Canary Is.) is smaller, darker on upper-parts and browner on under-parts, *Ph. c. exsul* (eastern Canary Is.) is still smaller but paler than last, *Ph. c. sindianus* is like *Ph. c. tristis* but is smaller and has no green on wings. Both forms of *Ph. t. trochilus* have 2nd primary not shorter than 6th instead of equal to or shorter than 7th, and only 3rd to 5th emarginated instead of 3rd to 6th as in *Ph. collybita*. *Ph. sibilatrix* has longer wing and much shorter 1st primary.

FIELD-CHARACTERS.—Different species of *Phylloscopus* are much alike in form and colour, and are recognizable in the field rather by their notes and habits than their appearance. Chiffchaff closely resembles Willow-Warbler, but is rather smaller, duller in hue, and has blackish legs. Unmistakable song, "Chiff-chaff, chiff-chaff, chiff, chiff-chaff, chiff," is often uttered from top of high tree and is sometimes prefaced by low cricket-like chirp, "tiddy tiddy." Alarm-note, a plaintive "hoo-id" is almost identical with that of Willow-Warbler.

BREEDING-HABITS.—Generally nests at some little height from ground, and quite exceptionally touching it, in clumps of brambles in woods or low bushes ; and also among thick branches of yews, hollies, etc., also sometimes among ivy on walls. *Nest*.—Roughly spherical in shape, with a shallow side entrance : more loosely built than Willow-Warbler's, and usually with dead leaves as foundation, and built of moss, stalks, etc., with thick lining of

feathers. *Eggs*.—Usually 6, occasionally 5 or 7, rather glossy white in ground and spotted and speckled with dark purplish-brown. Also said to occur with reddish-brown markings. Average of 71 British eggs, 15.3×12.1 mm. *Breeding-season*.—From early May to end of month: probably single-brooded as a rule. *Incubation*.—About 13 days: apparently by hen only.

Food.—Eggs, larvæ and imagines of small insects (coleoptera, diptera, lepidoptera): also aphides and small spiders, mostly obtained from forest trees, often at a considerable height.

DISTRIBUTION.—*England, Wales, and Ireland*.—Summer-resident, and in most years a few winter in south England, especially Cornwall and Devon, and in Ireland, and very exceptionally in north England. Well distributed, but rare or local in Norfolk, Lancs., and north-west Yorks. Also a passage-migrant. *Scotland*.—Except in south-west (Solway and Clyde) and south-east (Tweed), where it is local summer-resident, in Forth, where it is extremely local, and in some I. Hebrides, where it has nested (Arran, Bute, Mull), it is a somewhat rare passage-migrant occurring in small numbers up east side, and still more rarely in Orkneys, Fair Isle, and Shetlands. On west side from Argyll northwards practically unrecorded, but has been noted as fairly common near Loch Maree (Ross.) (A. H. Evans, *Ann. S.N.H.*, 1896, p. 94); only a rare vagrant to O. Hebrides.

MIGRATIONS.—*British Isles*.—Early stragglers, second week March (early dates Mar. 2, 5, 6.) Main arrival of summer-residents begins March 25 to 30, and lasts to about fourth week April. Passage-migration, second week April to third week May. Departure of summer-residents begins first week Aug. and becomes merged in movements of passage-migrants that begin about second week Sept. and last to mid-Oct. (late dates Oct. 31, Nov. 1, 7.)

DISTRIBUTION.—*Abroad*.—Breeding in central, west, and south Europe. Winters in Mediterranean countries, and in tropical Africa. Replaced by closely-allied forms in east and north Europe, Siberia, and central Asia, and on Canary Islands.

124. *Phylloscopus collybita abietinus* (Nilss.)—THE SCANDINAVIAN CHIFFCHAFF.

SYLVIA ABIETINA Nilsson, Kgl. Vet.-Akad. Handl., p. 115 (1819, Sweden).
Phylloscopus collybita abietina (Nilss.), Bonhote, Bull. B.O.C., xxiii, p. 21;
id., Brit. B., II, p. 233.

DESCRIPTION.—Very similar to *Ph. c. collybita* and in autumn usually not to be distinguished by coloration, though sometimes distinctly whiter on under-parts. In spring and summer upper-parts are paler, more greyish, especially on crown, nape and upper

mantle, which are greyish-brown with scarcely a tinge of green; ear-coverts and sides of neck are also more greyish-brown with only a tinge of yellow; under-parts are whiter, less buff and yellow. Moults as in *Ph. c. collybita* but often autumn moult not complete before Oct.

Measurements and structure.—♂ wing 62–66 mm., tail 50–52, tarsus 19–21, bill from skull 9.5–11 (20 measured). ♀ wing 56–67. Wing longer than in *Ph. c. collybita* but largest individuals of latter equal smallest of *Ph. c. abietinus*. Tail averages longer. Other structure as in *Ph. c. collybita*.

BREEDING-HABITS.—Similar to those of the British breeding race, but according to Collett the clutch usually consists of 8 eggs, laid during May or early in June. Average of 43 eggs, 15.1 × 12.0 mm.

FOOD.—Presumably similar to that of typical race.

DISTRIBUTION.—*England.*—One, a female, St. Catherine's Light (Isle of Wight), April 15, 1907 (*ut supra*). *Scotland.*—Fair Isle (Shetlands) regular spring and autumn passage-migrant (W. E. Clarke, *Studies in Migration*, II., p. 131). St. Kilda, one Oct. 11, 1911 (*id. t.c.*, p. 214). Isle of May (Forth) a good many Sept.–Oct., 1912, one Sept. 30, and others Oct. 1913, two Nov. 1914 (E. V. Baxter and L. J. Rintoul, *Scot. Nat.*, 1913, p. 52, 1914, pp. 108–9, *Ibis*, 1918, p. 269). Aukerry (Orkneys) small numbers, Sept., Oct., 1913 (W. E. Clarke, *Scot. Nat.*, 1914, p. 8). Probably regular passage-migrant, perhaps only in small numbers, but undoubtedly overlooked owing to difficulty of identification.

DISTRIBUTION.—*Abroad.*—Generally north and east Europe, but difficult to distinguish, therefore distribution not well known, and requiring further study. In winter known to occur in southern Arabia and Egypt.

125. *Phylloscopus collybita tristis* Blyth—THE SIBERIAN CHIFFCHAFF.

PHYLLOSCOPUS TRISTIS Blyth, Journ. As. Soc. Bengal, XII, p. 966 (1843–Calcutta).

Phylloscopus tristis, Clarke, Ann. Scot. Nat Hist., 1907, p. 15; *id.*, Bull. B.O.C., XIX, p. 18; Saunders, Brit. B., I, p. 8.

DESCRIPTION (Plate 11).—*Adult. Winter.*—Like *Ph. c. collybita* but upper-parts brown with only a tinge of green on mantle and rump (in some examples this green tinge is absent); stripe from base of bill over eye and orbital ring white or creamy-white; ear-coverts, sides of neck, sides of breast and flanks pale buffish-brown; rest of under-parts white washed pale buffish-brown with no yellow as in *Ph. c. collybita*; axillaries and under wing-

coverts bright pale lemon-yellow ; wings and tail much as in *Ph. c. collybita* but with narrow fringes of olive-green on outer webs ; wing-coverts brown narrowly tipped and fringed olive-green. *Summer*.—As winter but still browner with usually no trace of green on upper-parts and scarcely any on wings and tail. Moults as in *Ph. c. abietinus*.

Nestling.—(Not examined.)

Juvenile.—Like adult summer, but upper-parts rather paler brown and without any green tinge.

Measurements and structure.—♂ wing 56–66 mm., tail 45–53, tarsus 17.5–21, bill from skull 9.5–10.5 (12 measured). ♀ wing 54–61. Primaries : 1st 5–8 mm. longer than longest primary-covert, 4th and 5th longest, 3rd sometimes as long but usually 1 mm. shorter, 6th .5–2 shorter, 7th 3–5 shorter, 2nd usually between 8th and 9th or equal to 8th, only occasionally longer than 8th ; 2nd is thus usually shorter proportionately and 6th and 7th are usually a shade longer proportionately than in *Ph. c. collybita*. Other structure as in *Ph. c. collybita*.

Soft parts.—As in *Ph. c. collybita* but legs and feet usually blacker

CHARACTERS.—Easily distinguished from both *Ph. c. collybita* and *Ph. c. abietinus* by absence of yellow in under-parts, pale buffish-brown sides of breast and flanks, brown (not olive) upper-parts.

FIELD-CHARACTERS.—Distinguishable from *Ph. c. collybita* by its white under-parts, which are almost suggestive of Lesser White-throat, and at once mark it out as distinct from any common British *Phylloscopi*. The single bird observed by me during a fortnight in Kent in December spent all its time ceaselessly flitting along some hedge-rows in a deep gully, and in its behaviour showed no peculiarity to distinguish it from allied species. Note, fairly frequently uttered, was single, a good deal more plaintive than that of Chiffchaff or Willow-Wren, and perhaps nearest to the single note sometimes uttered by Coal-Tit ; its difference from notes of the common species is so marked as to attract attention at once (H. G. Alexander).

BREEDING-HABITS.—Nests often in willow and alder thickets or in rank vegetation, at times also in flood refuse stranded in bushes.

Nest.—Similar to that of typical race, warmly lined with feathers.

Eggs.—Also similar in type, but markings sometimes red instead of purple. Clutch 5–9, probably 6–7 normally. Average of 80 eggs 15×11.9 mm. *Breeding-season*.—May and June in the Altai, but end of June and early July in north Siberia.

FOOD.—Insects, chiefly diptera (mosquitoes) during breeding-season.

DISTRIBUTION.—*England*.—One watched Tunbridge Wells (Kent

Nov. 28 to Dec. 17, 1913 (H. G. Alexander, *Brit. B.*, VII., p. 296.)—*Scotland*.—Fair Isle (Shetlands) recorded regularly in autumn (earliest Oct. 4, latest Nov. 6) from 1907 to 1914, once spring, May 7, 1909; Lerwick (Shetland), one obtained Oct. 28, 1910, and others seen there Oct. and one Dec. 27, 1913, one Oct. 24, 1914; Orkneys, one Sule Skerry Light* Sept. 23, 1902, one obtained and another seen, Kirkwall, Feb. 5, 1908, had been observed since Jan. 25; Isle of May, one obtained Oct. 16, 1910; Little Ross Light (Kirkcudbright) one Dec. 3, 1916.

DISTRIBUTION.—*Abroad*.—Breeding from Petchora and Ural to Lake Baikal, migrating through Turkestan, and wintering in India. In Oct., 1846, obtained in Heligoland.

PHYLLOSCOPUS TROCHILUS

126. *Phylloscopus trochilus trochilus* (L.)—THE WILLOW-WARBLER.

MOTACILLA TROCHILUS Linnæus, *Syst. Nat.*, ed. x, i, p. 188 (1758—*Ex cit.* Willughby, etc. Restricted typical locality: England; *cf.* Hartert, *Vög. pal. Fauna*, I, p. 507).

Phylloscopus trochilus (Linnæus), Yarrell, I, p. 432; Saunders, p. 69.

DESCRIPTION.—(Plate 11).—*Adult male and female. Winter.*—Whole of upper-parts olive-green to olive-brown slightly more yellowish-green on rump; stripe from nostrils over and behind eye yellow; lores dusky black, feathers tipped whitish or yellowish; ear-coverts pale brown to yellowish-brown streaked pale yellow; chin, throat, and upper-breast whitish, more or less streaked lemon-yellow, often with pale brownish streaks or wash on sides of breast; lower-breast and belly white with a few faint yellow streaks; flanks very pale yellowish-buff; vent and under tail-coverts pale yellow; axillaries and under wing-coverts bright lemon-yellow; tail- and wing-feathers dark-brown, inner webs fringed very narrowly dull white and outer webs more broadly olive-green or olive-brown, wing-feathers with small whitish tips; wing-coverts dark brown broadly fringed and tipped olive-green or olive-brown. This plumage is acquired by a complete moult in July and August (sometimes beginning end June). *Summer.*—A complete moult (including wings and tail) takes place Dec. to March. New plumage like winter but perhaps slightly less green and more brown on upper-parts, and as summer advances abrasion makes under-parts whiter and less yellow and upper-parts still more brown and less green.

Nestling.—Down, greyish-white, fairly long but not plentiful; distribution, inner supra-orbital, occipital and humeral. Mouth, inside orange-yellow, two faint brownish marks on tongue-spurs, externally flanges lemon-yellow.

Juvenile. Male and female.—Whole upper-parts brown tinged olive (browner than adult); eye-stripe yellow; ear-coverts pale brown streaked buff and yellow; chin and throat dull buffish-yellow; upper-breast dusky buff; lower-breast and belly very pale yellow; under tail-coverts rather more buff; flanks whitish-buff; axillaries pale yellow.

First winter. Male and female.—Like adult but slightly more yellowish-brown, not so greenish on upper-parts and much yellower on under-parts, throat and breast being deeper yellow and belly only shade paler instead of white, sides of breast and flanks deeper yellowish-buff. The juvenile body-feathers are moulted July and Aug. but not wing-coverts, wings or tail. *First summer.*—Like adult and moult same.

Measurements and structure.—♂ wing 64–70 mm., tail 49–52, tarsus 19–21, bill from skull 10–11 (12 measured). ♀ wing 60–66. Primaries: 1st 3–6 mm. longer than longest primary-covert, 3rd and 4th longest and equal, 5th 1–3 shorter, 6th 5–8 shorter 7th 8–11 shorter, 2nd usually between 5th and 6th sometimes as short as 6th occasionally as long as 5th; 3rd to 5th emarginated outer webs. Rest of structure as Chiffchaff.

Soft parts.—Bill brown with base of lower mandible paler; legs and feet pale to dark brown; iris hazel.

CHARACTERS AND ALLIED FORMS.—For differences of *Ph. t. eversmanni* see under that form, and of Chiffchaff see under that species.

FIELD-CHARACTERS.—Differs from Chiffchaff in being rather larger, and having brown legs and plumage tinged with yellow. Less restricted to woods and coppices, and much more abundant. Song a sweet warble rising at first and then descending until it seems to melt away. Alarm-note a plaintive “hoo-id” similar to that of Chiffchaff.

BREEDING-HABITS.—Breeds among grass in hedge-bottoms, by road sides or open glades in woods. Occasionally in low bush, on trellis or in ivy on wall, but normally nesting on ground, though occasionally recorded as much as 14 or 16 ft. above it. *Nest.*—Domed with neat entrance at side, built of green moss, inter-woven stalks, grasses, sometimes bracken, lined freely with feathers almost invariably. *Eggs.*—Normally 6–7, rarely 8 or 9 but in late layings 4 and 5 may be found. Variable: some finely freckled light red: others blotched light red-brown; a third type boldly spotted dark sienna-brown. 50 British eggs average 15.2×12.3 mm. *Breeding-season.*—About end April and first half May. Most birds are apparently single brooded, but a few may be found nesting in June and July. *Incubation.*—Normally 13 days (J. H. Owen and W. Evans), by hen only. *Fledging-period.*—Variable, 12–16 days as a rule (S. E. Brock and J. H. Owen.)

FOOD.—Eggs, larvæ and imagines of insects, mainly coleoptera, diptera, and smaller lepidoptera, chiefly from hedgerows and bushes: also aphides, spiders, etc. Elder berries and currants eaten in autumn (Naumann).

DISTRIBUTION.—*British Isles*.—Summer-resident, abundant and widely distributed, but somewhat local Cornwall, local north Caithness, local Skye, but common in other I. Hebrides; has nested very rarely O. Hebrides and Shetlands, but is seen on spring and autumn passage in these islands, as well as Fair Isle and Orkneys. Also abundant passage-migrant on south, west, and east coasts England, and east coast Scotland. Occasionally stays winter in south (rarely in north) England and in Ireland.

MIGRATIONS.—*British Isles*.—Early arrivals from third week March onwards (early dates March 9, 10, 11). Main arrival of summer-residents begins second week April and becomes merged in movements of passage-migrants that start at same time and last to first week June. Departure of summer-residents begins last week July and lasts to end Sept. Passage-migration, early Aug. to end first week Oct. Stragglers fairly frequent up to Oct. 22nd (late date Nov. 5).

DISTRIBUTION.—*Abroad*.—From Lapland, Finland, Scandinavia, and north Russia throughout west, central, and south Europe, except in Balkan Peninsula. In winter in Africa, in small numbers in Mediterranean countries. Passage-migrant Canaries: casual Madeira. Replaced in north-east Russia and Siberia by *Ph. t. eversmanni*.

127. *Phylloscopus trochilus eversmanni* (Bp.) — THE NORTHERN WILLOW-WARBLER.

PHYLLOPNEUSTE EVERSMANI (corr. *eversmanni*) Bonaparte, Consp. Gen. Av., I, p. 289 (1850—Ex Eversmann, Addenda. Actual typical locality: Kazan and Orenburg).

Phylloscopus trochilus eversmanni (Bonap.), C. B. Ticehurst, Bull. B.O.C., XXIII, p. 20; cf. Brit. B., II, pp. 234, 342, v, p. 28).

DESCRIPTION (Plate 11).—*Adult male and female*. *Winter*.—Like *Ph. t. trochilus* and impossible to distinguish satisfactorily but usually rather browner and less green on upper-parts. Moults as in *Ph. t. trochilus*. *Summer*.—Moults as in *Ph. t. trochilus* after which it is considerably browner and less green than the typical form on upper-parts; eye-stripe whiter; ear-coverts and sides of neck brown and white; under-parts whiter, less marked with yellow; under wing-coverts and axillaries yellow to pale yellow (occasionally whitish). Individuals vary, some (especially more eastern examples) having scarcely any green on upper-parts and having no yellow on under-parts (except under wing) and eye-

stripe white, are very distinct from *Ph. t. trochilus*. As summer advances most examples become by abrasion pale brown on upper-parts with a tinge of green on wings and rump and white on under-parts.

Nestling.—(Not examined).

Juvenile.—Like that of *Ph. t. trochilus* but apparently less yellow on under-parts (only one examined.)

First winter.—Apparently less yellow on under-parts than first winter, and thus resembling adult winter *Ph. t. trochilus*.

Measurements and structure.—♂ wing 68–72 mm., tail 50–54, tarsus 19–21, bill from skull 10–11 (16 measured). ♀ wing 62–67. Wing and tail of male thus averaging longer than in *Ph. t. trochilus*. Wing-formula as in *Ph. t. trochilus* but 2nd between 5th and 6th in all specimens examined.

Soft parts.—As in *Ph. t. trochilus*.

BREEDING-HABITS.—Similar to those of British breeding form. *Eggs*.—Usually 5–7, generally of light freckled type. Average of 21 eggs, 15.5×12.2 mm. *Breeding-season*.—Latter half of June or early July.

FOOD.—Similar to that of typical form, but diptera (mosquitoes) form main food in breeding-season.

DISTRIBUTION.—*Great Britain*.—Passage-migrant, having been detected usually in small numbers in spring (end April and May) in Isle of Wight, Sussex, Kent, Norfolk, Yorks, Bardsey (Carnarvon), Kirkeudbrightshire, Wigtownshire, Bass Rock (Haddington), Isle of May, Shetlands (Fair Isle sometimes in large numbers). In Sept. once in Norfolk and Yorks, three times on Bardsey, in Oct. once in Norfolk, in Nov. once on Isle of May. Probably regular passage-migrant in autumn but overlooked owing to difficulty of identification.

DISTRIBUTION.—*Abroad*.—North-east Russia and Siberia, at least to River Kolyma. Once obtained in Bering Sea. On migration in Roumania, and apparently wintering in Africa. Often difficult to distinguish, therefore distribution not well known.

PHYLLOSCOPUS NITIDUS

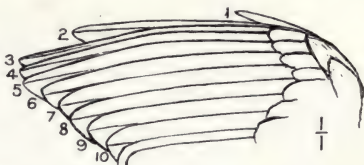
128. *Phylloscopus nitidus viridanus* Blyth—THE GREENISH WARBLER.

PHYLLOSCOPUS VIRIDANUS Blyth, Journ. As. Soc. Bengal, xii, p. 967 (1843—Calcutta and Nepal).

Phylloscopus viridanus Blyth, Saunders, p. 65.

DESCRIPTION (Plate 11).—*Adult male and female. Winter*.—Whole upper-parts olive-green tinged brown, upper tail-coverts usually rather browner than rest of upper-parts; lores blackish,

feathers tipped pale cream or whitish ; ear-coverts brown more or less marked pale cream or whitish ; narrow circle round eye and stripe from nostrils over and behind eye pale creamy yellow ;



The Greenish Warbler (*Phylloscopus n. viridanus*). Note shorter 2nd and longer 1st primaries than in Eversmann's Warbler.

whole under-parts, including under tail-coverts and axillaries, whitish-yellow, with sides of breast and flanks tinged dusky-olive ; tail-feathers, primaries and secondaries brown edged on outer webs green and on inner webs whitish ; wing-coverts brown with outer webs and tips fringed green, varying number of outer greater coverts with the tips of their outer webs whitish or if not whitish in any case paler than the rest of the feathers. (N.B. This character varies considerably being in some examples quite obvious and in others requiring careful scrutiny to detect). This plumage is acquired by complete moult Aug.-Oct. *Summer*.—A complete moult (including wings and tail) takes place in March-April. New plumage as winter.

Nestling.—(Not examined.)

Juvenile.—Like adult but considerably browner and less green on upper-parts.

First winter.—Like adult. The juvenile body-plumage and sometimes the innermost secondaries are moulted Aug.-Oct., but not rest of wings nor tail.

Measurements and structure.—♂ wing 61–65 mm., tail 45–51.5, tarsus 18–21, bill from skull 10.5–11.5 (12 measured). ♀ wing 58–62. Primaries : 1st 5–10 mm. longer than longest primary-covert, 4th longest, 3rd and 5th .5–1.5 shorter, 6th 2–4 shorter, 7th 6–9 shorter, 2nd usually between 7th and 8th, occasionally as long as 7th or as short as 8th (rarely between 8th and 9th) ; 3rd to 6th emarginated outer webs. Rest of structure as Chiffchaff.

Soft parts.—Bill, upper mandible dark brown, lower very pale brown ; legs and feet brown ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*Ph. n. nitidus* (Caucasus, Transcaspia, Persia) is considerably greener on upper-parts and more yellow on under-parts and the median as well as the greater wing-coverts are tipped with pale yellow thus forming a double wing-bar, in worn plumage the tips of the median coverts, however,

disappear, *Ph. n. plumbeitarsus* (Transbaikal to Sea of Okhotsk) is like *Ph. n. viridanus* in general coloration but has double wing-bar as in *nitidus*. Much resembles Chiffchaff and Willow-Warbler in general coloration but distinctly paler under wing-coverts and axillaries, wing-formula as Chiffchaff, pale tips to greater wing-coverts distinguish it. Also somewhat resembles those specimens of *Ph. b. borealis* which show only one wing-bar but besides other differences 1st primary is shorter and 2nd longer in *Ph. b. borealis*.

BREEDING-HABITS.—Nests on ground in grass: once in crevice between loose stones. *Nest.*—Built of green moss, with a little grass and a few leaves, lined with goats' hair or wool, and domed with side entrance. *Eggs.*—4 normally, pure white, without gloss and very thin shelled. Occasionally faint reddish markings on eggs. Average of 9 eggs, 14.9×11.6 mm. *Breeding-season.*—Early in June.

FOOD.—Probably insects, but definite information wanting.

DISTRIBUTION.—*England.*—One, a female, North Cotes (Lincs.), Sept. 5, 1896 (G. H. Caton-Haigh, *Bull. B.O.C.*, vi, p. viii). [A second record, Sule Skerry Light., afterwards shown to be *Phylloscopus b. borealis*, *vide infra*, No. 130.]

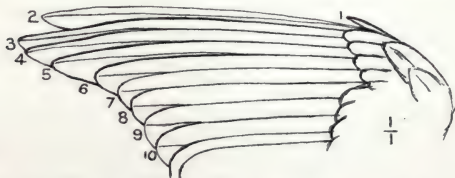
DISTRIBUTION.—*Abroad.*—Breeds from Baltic Provinces of Russia (possibly north-east Prussia) throughout central Russia to west Siberia and north Turkestan. Winters in India. Accidental Heligoland (3 times). Replaced by *Ph. n. nitidus* in Caucasus, Transcaspia and Persia, and by another form in east Siberia and other parts of Asia.

PHYLLOSCOPUS SIBILATRIX

129. *Phylloscopus sibilatrix sibilatrix* (Bechst.) — THE WOOD-WARBLER.

MOTACILLA SIBILATRIX Bechstein, *Naturforscher.*, xxvii, p. 47 (1793—Thuringian mountains).

Phylloscopus sibilatrix (Bechstein), Yarrell, i, p. 427; Saunders, p. 71.



The Wood-Warbler (*Phylloscopus s. sibilatrix*). Note minute 1st primary.

DESCRIPTION (Plate 11).—*Adult male and female. Winter.*—Whole upper-parts green, crown and upper mantle tinged brownish; conspicuous stripe from nostrils, over and behind eye sulphur-yellow; line through lores and behind eye dark brownish-green; ear-coverts greenish-yellow; chin, throat, upper-breast and tibial feathers pale sulphur-yellow; axillaries and under wing-coverts brighter sulphur-yellow mixed with white; rest of under-parts pure white; tail and wing-feathers dark brown fringed on outer webs yellowish-green and on inner webs white; all wing-coverts dark brown with yellowish-green tips and fringes.. This plumage is acquired by complete moult in July-Sept. *Summer.*—A complete moult (including wings and tail) takes place from Jan. to March. New plumage like winter but considerably brighter, more golden-green on upper-parts and sulphur-yellow of eye-stripe, chin and throat usually brighter. Abrasion makes crown and mantle somewhat greyer-green and throat rather less yellow by June or July.

Nestling.—Down, pale-grey, long but scanty. Distribution inner supra-orbital, occipital and humeral. Mouth inside bright deep yellow, no tongue-spots, externally flanges pale yellow.

Juvenile.—Like adult winter but still duller green with a greyish-brown tinge on all upper-parts.

First winter.—Like adult winter but perhaps slightly more tinged with brownish on upper-parts. The juvenile body-plumage is moulted July-Aug., but apparently not any wing-coverts nor wing- and tail-feathers. *Summer.*—Moult like adults after which is indistinguishable.

Measurements and structure.—♂ wing 74–78 mm., tail 48–53, tarsus 17.5–19, bill from skull 11–11.5 (12 measured). ♀ wing 71–76. Primaries: 1st 2–5 shorter than primary-coverts, 3rd longest, 4th 1–3 mm. shorter, 5th 4–8 shorter, 6th 9–12 shorter, 2nd 1–3 shorter (usually equal to or slightly shorter than 4th); 3rd to 5th emarginated outer webs. Rest of structure as Chiffchaff.

Soft parts.—Bill: upper mandible blackish-brown, lower mandible yellowish-flesh; legs and feet pale yellowish-brown, soles yellow; iris brown-black.

CHARACTERS AND ALLIED FORMS.—*Ph. s. erlangeri* (Mediterranean countries) is slightly more golden on upper-parts but is a doubtful form. Large size, bright yellowish-green upper-parts, pure white belly contrasted to yellow throat and 1st primary shorter than primary-coverts distinguish it from other *Phylloscopi*.

FIELD-CHARACTERS.—Distinguished from Willow-Warbler and Chiffchaff by its rather larger size, longer wings, greenish upper-parts, sulphur-yellow breast and throat, and broad yellow superciliary stripe. Essentially a woodland species, affecting especially woods of beech and oak. Captures much of its insect food from under-

sides of leaves, beneath which it hovers. Shivering song "Sip, sip, sip, sip, tr-r-r-r-r-ree" is often uttered on the wing as the bird passes from a lower branch of one tree to that of another and when uttered from perch is usually accompanied by shivering of wings. Song is sometimes prefaced by a plaintive note, "dee-ur, dee-ur." Alarm note a mournful "pee-ou."

BREEDING-HABITS.—Breeds in woods with undergrowth of bracken and brambles, making use of natural hollow in ground. *Nest.*—Built of dead bracken, dead leaves and grass, domed, with side entrance, neatly lined with fine bents, and occasionally a few hairs, but no feathers. *Eggs.*—Normally 6–7, occasionally 8 or 5 only, white, thickly spotted and speckled with dark red-brown and at times a few ashy shell-marks, the markings sometimes forming a zone. *Breeding-season.*—Last fortnight of May and first week of June. One brood. *Incubation.*—About 13 days, probably by hen only.

FOOD.—Insects, in all stages from egg to imago, chiefly taken from leaves and branches of trees or on the wing: coleoptera, lepidoptera, diptera, etc. Saxby records portions of *Ephemeræ*: aphides also largely taken. Berries said to be eaten in autumn.

DISTRIBUTION.—*England and Wales.*—Summer-resident (mid-April to Sept. Early date Mar. 16). Widely distributed in well-wooded districts, but local, being abundant in some parts (especially those heavily-wooded with beech and oak) and rare or unknown in treeless districts. Has been observed Isle of Man. *Scotland.*—Fairly common, but local to Loch Broom (Ross), north of which on west side unknown as nester. On east side fairly common in south-east Sutherland (as far west as Lairg), but very rare further north. Scarce visitor to Shetlands and Orkneys, single birds Fair Isle, June and Aug., 1907, May 1909, a number May 1910, single birds Aug. 1911, May 1912 and 1913, single birds Lerwick, May 1913 and Aug. 1914, single birds Sule Skerry Sept. 1906 and Auskerry Sept. 1913. A summer-resident in most I. Hebrides but only seen twice (N. & S. Uist) and obtained once (Aug. 1917, N. Uist) in O. Hebrides. *Ireland.*—Extremely scarce, nesting small numbers Galway and Queen's co., and Wicklow. Vagrants have been taken in Donegal, Antrim, Fermanagh, Mayo and Dublin, and seen in Sligo, Londonderry, Antrim, Fermanagh (May 18–June 7) and Wexford.

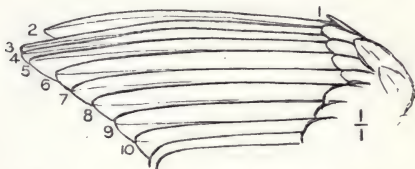
DISTRIBUTION.—*Abroad.*—Europe from Upsala, south Finland and Archangel to France, Alps, and Austria-Hungary. Occasional Canaries: casual Madeira. Winters in Tropical Africa. Replaced by an ill-defined subspecies in the Mediterranean countries.

PHYLLOSCOPUS BOREALIS

130. *Phylloscopus borealis borealis* (Blas.)—EVERSMANN'S WARBLER.

PHYLLOPNEUSTE BOREALIS Blasius, Naumannia, p. 313 (1858—Sea of Ochotsk.).

Phylloscopus borealis (Blasius), Clarke, Ann. Scot. Nat. Hist., 1909, p. 1.



Eversmann's Warbler (*Phylloscopus b. borealis*). Note longer 2nd and shorter 1st primaries than in Greenish Warbler.

DESCRIPTION (Plate 11).—*Adult male and female. Winter.*—Whole upper-parts dark olive-green; stripe from nostrils, over and behind eye pale creamy-yellow; streak through lores and behind eye dark olive-green; ear-coverts pale yellow mottled dark olive; under-parts yellowish-white with faint pale yellow streaks, upper-breast very faintly streaked dusky-olive and sides of breast and flanks washed olive; axillaries whitish edged and tipped pale yellow; wing and tail-feathers dark-brown, outer webs edged olive-green and inner webs narrowly whitish; all wing-coverts dark brown edged and tipped olive-green but the outer half of greater coverts with pale yellow or whitish tips and a few of the median coverts similarly, but not so distinctly, tipped. This plumage is acquired by complete moult in August. *Summer.*—A complete moult (including wings and tail) takes place Jan. to March. New plumage as winter. Abrasion has little effect except that pale tips of median coverts usually become worn off and sometimes those of greater coverts are almost entirely worn away.

Nestling.—(Not examined.)

Juvenile.—Resembling adult but upper-parts considerably less green, being strongly tinged greyish-brown especially on crown and mantle; under-parts whiter with only a very slight tinge of yellow, sides of breast and flanks washed pale brown; wing-coverts with brownish-green edges and tips and pale tips of outer greater coverts whiter, pale tips of outer median coverts very small or absent.

First winter.—Intermediate between adult and juvenile, wings, tail and wing-coverts become browner as autumn advances and pale tips wear off median coverts and often a mere trace is



(HALF NATURAL SIZE.)

1, Chiffchaff (*Phylloscopus c. collybita*) winter. 2, Siberian Chiffchaff (*Ph. c. tristis*) winter. 3, Adult summer, 4, First winter of Willow-Warbler (*Ph. t. trochilus*). 5, Northern Willow-Warbler (*Ph. t. evermanni*) adult summer. 6, Greenish Warbler (*Ph. n. viridanus*). 7, Wood-Warbler (*Ph. s. sibilatrix*) juvenile. 8, Eversmann's Warbler (*Ph. b. borealis*) first winter. 9, Yellow-browed Warbler (*Ph. h. premium*) winter.

[Face p. 312.]

left of those of greater coverts. The juvenile body-plumage is moulted in July-Sept. and usually three innermost secondaries but not rest of wings or tail, while frequently a number of juvenile body-feathers are retained throughout winter until spring moult, which is complete as adult.

Measurements and structure.—♂ wing 62–71 mm., tail 42–51, tarsus 18–20, bill from skull 11–12 (12 measured). ♀ wing 61–67. Primaries : 1st equal to, 1–2 mm. shorter or 1–3 mm. longer than longest primary-covert, 3rd and 4th longest, 5th 1–3 shorter, 6th 6–8 shorter, 2nd between 5th and 6th or equal to 6th, occasionally slightly shorter than 6th ; 3rd to 5th emarginated outer webs. Base of bill rather broader than other *Phylloscopi*, otherwise rest of structure as Chiffchaff.

Soft parts.—Bill, upper mandible dark horn, lower straw-colour ; legs and feet rather pale yellowish-brown, soles dull orange ; iris blackish-brown.

CHARACTERS AND ALLIED FORMS.—*Ph. b. xanthodryas* (Yesso, Kurile Is., Kamtschatka) has paler upper-parts and more yellow under-parts, *Ph. b. examinandus* (wintering Sunda Is.) is larger. Dark green of upper-parts, short 1st primary, pale tips to wing-coverts, measurements and wing-formula, distinguish *Ph. borealis* from other British *Phylloscopi*.

FIELD-CHARACTERS.—Considerably more dusky appearance than Willow-Warbler but has same manner of feeding by making little aerial tours after flies among leafy tops of trees. Utters constantly repeated husky “swee-up” moderately loud. (H. Lynes.)

BREEDING-HABITS.—Nests on ground—in birch forest as a rule—building domed nest with side entrance, built of grasses with some moss and dead leaves and lined fine grasses with no feathers. *Eggs.*—Apparently 6–7, but 4–5 also recorded. Little authentic material, but white with spots of dark red-brown : occasionally light red markings ; average of 17 eggs, 16.1×12.4 mm. *Breeding-season.*—End of June and early in July, one brood.

FOOD.—During breeding-season almost entirely mosquitoes of at least six species (Collett). Meves records hymenoptera (larvæ of *Tenthredo* or *Lophyrus* : also ants) and coleoptera : Dybowski aphides : Lynes coleoptera and other insects.

DISTRIBUTION.—*Scotland.*—The first, Sule Skerry Light (Orkneys), Sept. 5, 1902, was erroneously recorded as *Ph. n. viridanus* (cf. Saunders, *Bull. B.O.C.*, XIII, p. 12, W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1903, p. 22), and subsequently correctly identified (*id.*, *op.c.*, 1909, p. 114. Second, Fair Isle (Shetlands), Sept. 28, 1908 (W. E. Clarke, *Ann. S.N.H.*, 1909, p. 1). Third, Fair Isle, Oct. 18, 1913 (*id.*, *Scot. Nat.*, 1914, p. 54.)

DISTRIBUTION.—*Abroad.*—North Norway and north Russia to east Siberia, in winter in southern parts of Asia and its islands as far as the Moluccas, Alor, and Sumba. Heligoland (once), Italy (once). Replaced by a closely-allied form on Kurile Islands, Yesso, and perhaps other Japanese islands and in Kamtschatka, also by another wintering in Sunda Islands, etc., breeding home of which is not yet known.

PHYLLOSCOPUS HUMEI

131. *Phylloscopus humei* præmium Math. & Ire.—THE YELLOW-BROWED WARBLER.

PHYLLOSCOPUS HUMEI PRÆMIUM Mathews and Iredale, Austral Av. Rec., III, p. 44 (1915—Russia).

*Motacilla superciliosa** Gmelin, Syst. Nat., I, p. 975 (1789—"Russia").

Phylloscopus superciliosus (J. F. Gmelin), Yarrell, I, p. 443; Saunders, p. 61.

Phylloscopus superciliosus superciliosus (Gm.), Hand-List B.B., p. 60 (1912).

DESCRIPTION (Plate 11).—*Adult male and female. Winter.*—Fore-head, crown, and nape varying from brownish-green to brown only tinged green, with an indistinct pale line down centre of crown; mantle and scapulars greener than crown; back and rump brighter yellowish-green; upper tail-coverts brownish-green; stripe from nostrils, over and behind eye and extending slightly over back of crown pale yellow to whitish; narrow line through lores and at back of eye dark brown; ear-coverts mottled greenish-brown and pale yellow; under-parts white tinged greenish-yellow; flanks brownish-green tinged yellow; axillaries white edged yellow; tail blackish-brown narrowly edged on inner webs whitish and on outer green; primaries same but with tips whitish; secondaries as primaries but with basal portions of outer webs showing 1 or 2 mm. beyond coverts brown and outer webs of innermost feathers broadly edged yellowish-white; primary-coverts blackish-brown narrowly edged green; greater and median coverts same, but former with broad and latter with narrower pale creamy to whitish tips forming conspicuous double wing-bar; lesser coverts brown tipped green. This plumage is acquired by complete moult in July-Aug. *Summer.*—The body-plumage and very occasionally wing-coverts, remiges and rectrices, are moulted Feb.-April. New plumage as winter but rather browner on upper-parts and with less yellow tinge on under-parts. Abrasion gradually reduces pale edgings so that in much worn summer specimens pale edges of inner secondaries are wanting and pale tips of median coverts almost disappear.

* *Motacilla superciliosa* Gmelin, 1789, is preoccupied by the use of the same name in 1783 by Boddaert for an American Warbler.

Nestling.—(Not examined.)

Juvenile.—Like adult but considerably browner on upper-parts and slightly tinged with greyish-buff on under-parts and tips of greater and median wing-coverts tinged buff.

First winter.—Like adult. The juvenile body-feathers and lesser wing-coverts are moulted in Aug. but not rest of wings nor tail-feathers.

Measurements and structure.—♂ wing 55–60 mm., tail 38–44, tarsus 17–18.5, bill from skull 9–10.5 (12 measured). ♀ wing 52–57. Primaries: 1st 3–7 mm. longer than longest primary-covert, 3rd to 5th about equal and longest, 6th 1.5–3 shorter, 7th 4–7 shorter, 2nd between 7th and 8th, very rarely slightly longer than 7th; 3rd to 6th emarginated outer webs. Extreme tips of wing- and tail-feathers sharply pointed. Rest of structure as Chiffchaff.

Soft parts.—Bill brown, with basal three-quarters of lower mandible straw-colour; legs and feet greyish-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*Ph. h. humei* (Altai, north-west Himalayas) has browner upper-parts and somewhat isabelline tinge in eye-stripe and under-parts, *Ph. h. mandellii* (eastern Himalayas) is rather bigger with longer tail. Small size, very distinct double wing-bar, pale edges to inner secondaries, pale line down centre of crown and green rump distinguish it from other British *Phylloscopi*. N.B. Wing-pattern much resembles that of Goldcrest, but easily distinguished from juvenile of latter by its yellow eye-stripe and other differences.

FIELD-CHARACTERS.—Small size, light green above and white below as well as prominent superciliary stripe and wing-pattern are all noticeable characters and make it quite easy to distinguish (H. Lynes).

BREEDING-HABITS.—Breeds on ground among moss and grass, sometimes among rhododendron bushes. *Nest*.—Domed, built of dead grasses and lined deer hair. *Eggs*.—5 to 7. White, with fine spots of dark red-brown, chiefly at big end. Average of 4 eggs, 14.8 × 11.2 mm. *Breeding-season*.—End of June or early July.

FOOD.—Small insects (Lynes). Detailed information wanting.

DISTRIBUTION.—*British Isles*.—Formerly considered rare vagrant, has lately been so often recorded on east coasts Great Britain and in Fair Isle that it may now be considered as an almost regular passage-migrant in very small numbers (more numerous some years than others) along east coast from mid-Sept. to late Oct. Has also occurred very rarely in west and once in Ireland. Two seen in spring (Kent, April 15, 1899, Dumfries., April 11, 1909). Following

recorded : *England*.—Twenty-four obtained and six seen, viz., Scilly Isles, three; Gloucester., one; Kent, two seen; Sussex, one; Suffolk, one seen, one shot; Norfolk, six obtained, and one seen; Lincs., six; Yorks., five; Northumberland, one; Notts., two probable seen. *Scotland*.—Many recorded, viz.: Dumfries., one seen; Kircudbrightshire, one seen; Berwickshire, one seen; Isle of May (Forth), twenty-one; east Ross., two; Fair Isle (Shetlands), fairly regular in small numbers in autumn; Sumburgh Head (Shetlands), one; Lerwick (Shetland) one; Auskerry (Orkneys) one; Swona (Orkneys), one; Pentland Skerries (Orkneys) three seen; Skerryvore Light (O. Hebrides), one. *Ireland*.—One, Tearaght Light (Kerry).

DISTRIBUTION.—*Abroad*.—Breeds in Siberia, migrates through greater part of Asia, and winters in southern China and India. Appears not rarely in Europe, from Orenburg and west Russia to Heligoland, Germany, Holland, Austria, and Italy. Replaced by allied forms in Altai, Tian-shan, Himalayas, and mountains south of Brahmaputra.

PHYLLOSCOPUS PROREGULUS

132. *Phylloscopus proregulus proregulus* (Pall.)—PALLAS'S WARBLER.

MOTACILLA PROREGULUS Pallas, Zoogr. Rosso-Asiat., i, p. 499 (1827—Transbaikalia).

Phylloscopus proregulus (Pallas), Saunders, p. 63.

DESCRIPTION.—*Adult male and female.* *Winter*.—Fore-head golden-green; crown dark green with a greenish-yellow stripe down centre, and brighter broad stripe from nostrils over eye continuing down sides of nape these stripes spreading and breaking up somewhat on the nape give the whole nape a streaked appearance; mantle, scapulars, back and upper tail-coverts green; rump pale greenish-yellow; line through lores and extending behind eye to base of neck dark green; ear-coverts greyish or yellowish usually mottled dark green; under-parts greyish-white tinged greenish-yellow, especially under tail-coverts; axillaries white edged bright greenish-yellow; tail-feathers brown outer webs edged yellowish-green; primaries same with inner webs narrowly edged whitish; secondaries same but with brown basal portions of outer webs showing 2 or 3 mm. beyond coverts and outer webs of innermost feathers broadly edged pale yellow; primary-coverts dark brown narrowly edged green; greater and median coverts dark brown edged green and broadly tipped greenish-yellow forming conspicuous double wing-bar; lesser coverts green with brown bases. This plumage is acquired by complete moult in Aug.—Sept. *Summer*.—The body-plumage is moulted in March and April but

apparently not wing-feathers, wing-coverts or tail-feathers. New plumage as winter. Tips to wing-coverts frequently become much reduced by wear during summer.

Nestling.—(Not examined).

Juvenile.—Like adult but crown dark sooty-brown with eye-stripe and median-stripe much less distinct than in adult and pale buff not so yellow; mantle, scapulars and back brown with only a tinge of green; rump white tinged buff; tips of wing-coverts and edgings of inner secondaries yellowish-buff; axillaries yellow as adult but rest of under-parts pale buff.

First winter.—Apparently like adult but tips to wing-coverts not so yellow—more buffish-white. The juvenile body-plumage and apparently median and lesser coverts and perhaps some of the inner greater coverts and innermost secondaries are moulted in early autumn, but not rest of wings or tail. N.B. No specimen actually moulting from juvenile to first winter has been available for examination.

Measurements and structure.—♂ wing 49–56 mm., tail 35–42, tarsus 16–17, bill from skull 8–9 (12 measured). ♀ wing 47–55. Primaries. 1st 5–8 mm. longer than longest primary-covert, 4th and 5th equal and longest, 3rd .5–1.5 shorter, 6th 1–3 shorter, 7th 4–6 shorter, 2nd between 7th and 9th; 3rd to 6th emarginated outer webs. Extreme tips of wing- and tail-feathers sharply pointed as in *Ph. h. præmium*. Rest of structure as Chiffchaff.

Soft parts.—Bill dark brown with basal part of lower mandible yellowish; legs and feet sepia; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*Ph. p. newtoni* (Himalayas) has a deeper yellow eye-stripe and usually 2nd primary is shorter. Most like *Ph. h. præmium* but eye-stripe, stripe down middle of crown and tips of wing-coverts brighter yellow and easily distinguished from this and all other British *Phylloscopi* by its yellow rump.

FIELD-CHARACTERS.—Yellow rump at once very obvious except when wings are closed, but one usually sees it hovering with rapidly whirring wings searching for insects among outer foliage. This habit and very small size make it look like a *Regulus*. When amongst thick foliage very difficult to find, and must generally first be located by its small soft—but quite *Phylloscopine*—"weesp" (H. Lynes).

BREEDING-HABITS.—A forest breeding form, nesting on boughs of moss-covered pines at 9–12 ft. from ground. *Nest*.—Domed, built of green moss and grass, lined feathers. *Eggs*.—5–6, white spotted dark red, generally with zone. Average size from 15 × 10.5 to 14 × 11 mm. *Breeding-season*.—Mid-June.

FOOD.—Insects, chiefly taken from trees or on the wing. Lynes records small diptera and hymenoptera (flying ants).

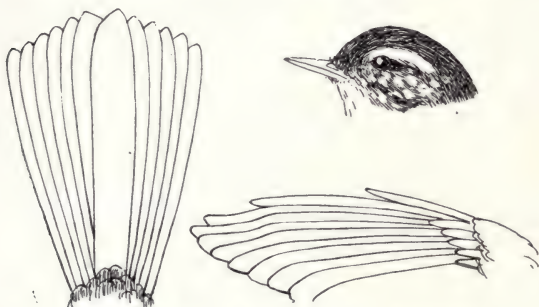
DISTRIBUTION.—*England.*—One, a female, Cley (Norfolk), Oct. 31, 1896 (T. Southwell, *Zool.*, 1896, p. 466).

DISTRIBUTION.—*Abroad.*—Breeds in east Siberia ; Zarudny found it passing through quite regularly near Orenburg (Ural), and it has been obtained on Heligoland. Winters in south China, and probably also elsewhere. Replaced by allied form in Himalayas.

133. *Phylloscopus fuscatus* (Blyth). — THE DUSKY WARBLER.

PHYLLOPNEUSTE FUSCATA Blyth, Journ. As. Soc. Bengal, XI, p. 113 (1842—Calcutta).

Phylloscopus fuscatus (Blyth), Clarke, Scot. Nat., 1913, p. 271.



The Dusky Warbler (*Phylloscopus fuscatus*). Natural size.

DESCRIPTION.—*Adult male and female.*—*Winter*—Forehead, crown, mantle, scapulars, and wing-coverts dark olivaceous-brown (often slightly tinged rufous); rump rather paler; upper tail-coverts more rufous; lores and behind eye dark brown; superciliary stripe (from nostrils to nape) rufous-buff paler in front of eye; ear-coverts and sides of neck same mottled dark brown; centre of throat and belly whitish; sides of throat, breast, and under tail-coverts rufous-buff; flanks darker washed greenish-brown; axillaries and under wing-coverts bright pinkish-buff; tail and wing-feathers dark brown with outer webs more rufous and fringed very pale pinkish-buff on inner webs and narrowly fringed same on outer webs of outer primaries. This plumage is acquired by complete moult Sept.—Oct. *Summer.*—The body-feathers and innermost secondaries are moulted in March and April but apparently not tail and rest of wing-feathers. Coloration as winter.

Nestling.—(Not examined).

Juvenile.—Much resembling adults but greyer on breast, not so buff on flanks, eye-stripe and ear-coverts greyer not so buff.

First winter male and female.—Resembling adults but more yellowish on centre of throat and belly and has a yellowish rather than rufous tinge on rest of under-parts. The juvenile body-feathers are moulted Aug. but apparently not wing-coverts, wing-feathers or tail. *Summer*.—Like adults and same moult.

Measurements and structure.—♂ wing 56–64, mm., tail 44–52, tarsus 20–22, bill from skull 11–13. (12 measured.) ♀ wing 53–61. Primaries: 1st about twice primary-coverts and half 2nd primary, 2nd between 8th and 10th (very seldom so long as 8th), 4th and 5th about equal and longest, 3rd and 6th 1–3 mm. shorter, 7th 5 shorter, 8th 7 shorter; 3rd to 6th emarginated outer webs. Rest of structure as Chiff-chaff.

Soft parts.—Bill, upper mandible dark brown, lower yellow; legs and feet yellowish-flesh; iris dark brown.

CHARACTERS AND ALLIED FORMS.—Long first primary, rufous-buff eye-stripe and under-parts and dark flanks are distinctive. *Ph. homeyeri* (Kamtschatka) is similar but has darker and less rufous upper-parts and less rufous eye-stripe and cheeks and probably should be treated as a subspecies. Closely resembling *Herbivocula schwarzi* in structure but bill finer, tail-feathers not so pointed and tarsus more slender, also in colour but usually more rufous.

BREEDING-HABITS.—Breeds near water, on ground or a foot or so above it. *Nest*.—Domed built of dead grasses and moss and lined freely with feathers. *Eggs*.—5–6, white without gloss, 18×12.5 to 15.3×12.5 mm. *Breeding-season*.—Mid-June.

FOOD.—Small insects recorded by Lynes.

DISTRIBUTION.—*Scotland*.—One, a female, Auskerry (Orkney), Oct. 3, 1913 (*ut supra*). *England*.—One, West St. Leonards (Sussex), Oct. 18, 1916 (J. B. Nichols, *Brit. B.*, XI., p. 45).

DISTRIBUTION.—*Abroad*.—Breeds from Yenisei eastward to Sea of Okhotsk, and from Mongolia and Manchuria northwards probably to about lat. 64° N. On migration, occurs in China, Japan and Mongolia, wintering in Formosa, south China, Burma, Assam, Nepal, Tenasserim, and plains of northern India.

Genus HERBIVOCULA Swinh.

HERBIVOCULA Swinhoe, Proc. Zool. Soc. London, 1871, pp. 353, 354 (Monotype: *H. flemingi*=*schwarzi*).

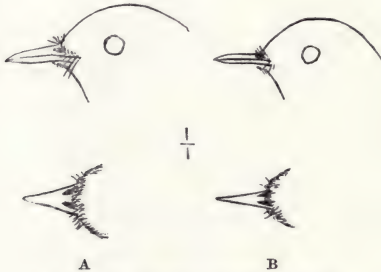
Near *Phylloscopus*, but bill stronger, short and thick, tarsi and feet stronger, rectal bristles more distinct. 1st primary long and wide, quite twice as long as primary-coverts and about half

as long as 2nd, which is generally between the 7th and 8th or 8th and 9th, or merely as long as 9th. 4th and 5th primaries longest and nearly equal, 3rd only a little shorter. Tail slightly rounded. Tarsi covered in front with lamina divided into a few long scutes, which in old birds are obsolete. Colour like Reed-Warbler. Sexes alike. One species. Distribution see under *H. schwarzi*.

HERBIVOCULA SCHWARZI

134. *Herbivocula schwarzi* (Radde).—RADDE'S BUSH-WARBLER.

SYLVIA (PHYLLOPNEUSTE) SCHWARZI Radde, Reise Süden v. O. Sibirien, II, p. 260, pl. IX (1863—Tarei Nor and Bureja Mountains).
Luscinola schwarzi (Radde), Saunders, p. 73*.



A. Radde's Bush-Warbler (*Herbivocula schwarzi*)
 B. The Dusky Warbler (*Phylloscopus fuscatus*).

DESCRIPTION.—*Adult male and female. Winter.*—Whole crown brown sometimes tinged olive; mantle, scapulars and rump olive to olive-brown; upper tail-coverts brown tinged rufous; prominent stripe over and behind eye pale buff or cream; lores and ill-defined streak behind eye dark brown; under eye and ear-coverts pale brown speckled pale buff or pale yellowish; chin and throat pale buff to white; upper-breast pale brown to tawny-buff; flanks and under tail-coverts tawny-buff to bright buff; centre of breast and belly white often tinged pale yellow and sometimes rather brighter yellow; axillaries and under wing-coverts bright buff; tail-feathers brown; wing-feathers dark brown, inner webs narrowly fringed dull white, outer webs fringed olive-brown to more rufous-brown; all wing-coverts olive-brown. This plumage is acquired by complete moult in early autumn. *Summer.*—Apparently no moult. Abrasion gradually makes upper-parts more greyish-brown and under-parts paler and whiter.

Nestling and Juvenile.—(Not examined.)

First winter.—Those specimens with a considerable amount of yellow on under-parts may be first winter birds, but as no juvenile and no moulting birds of any age have been available for examination it is impossible to say for certain.

Measurements and structure.—♂ wing 58–67 mm., tail 47–59, tarsus 21–23, bill from skull 10.5–11 (12 measured). ♀ wing 56–64. Primaries: 1st about twice as long as primary-coverts and half as long as 2nd primary, 2nd between 8th and 10th usually equals 9th, 4th and 5th longest, 3rd and 6th 1–2 mm. shorter, 7th 3–5 shorter; 3rd to 6th emarginated outer webs. Secondaries about equal 10th primary, tips pointed. Tail slightly rounded laterally, outer pair of feathers being 3–5 mm. shorter than central, twelve feathers, tips decidedly pointed. Under tail-coverts about half as long as tail. Bill rather broadened at base, compressed and strong at tip. A few fairly strong rictal bristles and some shorter nasal bristles. Nostrils uncovered.

Soft parts.—Bill: upper mandible brown, lower pale yellowish-flesh; legs and feet yellowish-flesh; iris dark brown.

CHARACTERS.—No subspecies. Much resembling *Phylloscopus fuscatus* but bill and legs noticeably stouter, tail-feathers more pointed, rictal bristles stouter, tail usually longer.

BREEDING-HABITS.—*Nest and Eggs* unknown.

FOOD.—Probably insects, but definite information lacking.

DISTRIBUTION.—*England*.—One, North Cotes (Lincs.), Oct. 1, 1898 (G. H. Caton-Haigh, *Bull. B.O.C.*, VIII, p. vi.).

DISTRIBUTION.—*Abroad*.—East Siberia, wintering in south China, Pegu, and Tenasserim.

Genus CETTIA Bp.

CETTIA Bonaparte, *Comp. List B. Europe and N. Amer.*, p. 11 (1838—Monotype: *C. cetti*, the two supposed species mentioned being the same).

At once recognizable by strongly rounded tail in which lateral rectrices are much shorter than middle pair; moreover, tail consists only of ten broad and soft rectrices; under tail-coverts cover about two-thirds of tail. Plumage very soft and long. Bill thin, narrow, and pointed, only some short and fine rictal bristles. Wings not very long, rounded; first primary broad, about half as long as second, which is hardly longer than secondaries and generally between the 10th and 11th, or equal to the 11th or 12th. Sexes alike. Nest a deep cup, eggs brick-red. One species.

CETTIA CETTI

135. *Cettia cetti cetti* (Temm.)—CETTI'S WARBLER.

SYLVIA CETTI Temminck,* *Man. d'Orn.*, 2nd ed., i, p. 194 (1820—Sardinia).
Cettia cetti, Nicoll, *Bull. B.O.C.*, xiv, p. 84; Saunders, *Brit. B.*, i, p. 9.

DESCRIPTION.—*Adult male and female.*

Winter.—Whole upper-parts uniform dark chestnut-brown, crown and nape usually less rufous than mantle, rump and upper tail-coverts; narrow stripe from nostrils, over and behind eye dull white; lores dark brown; ear-coverts and sides of neck pale greyish-brown; chin, centre of throat, breast and belly dull white; sides of throat and breast greyish-brown; flanks and under tail-coverts darker brown, latter tipped with dull white; under wing-coverts greyish-white and pale brown; axillaries pale greyish-brown tipped greyish-white; tail-feathers dark brown, outer webs fringed chestnut-brown; wing-feathers same but inner webs narrowly fringed whitish; all wing-coverts dark brown fringed and tipped chestnut-brown. This plumage is acquired by

complete moult in late summer. *Summer.*—A moult confined to the body, lesser and median wing-coverts, inner greater coverts and innermost secondaries takes place in March, but some individuals do not seem to moult at all in spring.

Nestling.—(Not examined.)

Juvenile.—Like adult but slightly less chestnut on upper-parts, white of under-parts rather duller.

First winter.—Like adults. The juvenile body-plumage and wing-coverts are moulted in July and August, but not primary-coverts, wing or tail-feathers.

Measurements and structure.—♂ wing 58-66 mm., tail 57-65, tarsus 21-24, bill from skull 12.5-14 (12 measured.) ♀ wing 54-60. Primaries: 1st broad, 9-12 mm. longer than longest primary-covert and about half as long as 2nd primary, 2nd equal to or shorter than 10th, 4th and 5th longest, 3rd and 6th 1 mm. shorter, 7th 2-4 shorter; 2nd to 6th emarginated outer webs. Secondaries rather shorter than 10th primary, tips rounded. Tail much rounded,



Cetti's Warbler

(*Cettia c. cetti*), Tail from below.

* Temminck's name was published Oct. 1820, whereas Marmora's *Sylvia cetti*, *Mem. Accad. Torino*, xxv, p. 254, was published in November or December, 1820.

ten feathers, two central pairs equal and longest, rest graduated, outermost being 9-13 mm. shorter than central, tips of feathers broad and rounded. Upper and under tail-coverts about half as long as tail. Bill fine and compressed. A few short, fine rictal bristles. Nostrils uncovered. Legs and feet strong.

Soft parts.—Bill dark brown with brownish-flesh base of lower mandible; legs and feet brownish-flesh; iris dark sepia.

CHARACTERS AND ALLIED FORMS.—*C. c. orientalis* (Palestine) is paler, *C. c. cettioides* (Turkestan, Persia) is larger and paler. For general characters see generic distinctions.

FIELD-CHARACTERS.—More rufous than Nightingale and tail shorter, broader and graduated. Usually keeps to thick cover close to water and is shy and difficult to observe. Song immediately attracts attention—very short and very loud, generally of three short phrases, it usually surprises one by suddenness of beginning and abruptness of ending. Alarm note "tchuk" repeated (H.F.W.).

BREEDING-HABITS.—Haunts banks of rivers, creeks, and swamps with thick covert of bramble-brakes, tamarisk, reeds or rank vegetation. *Nest*.—Often built in dead brambles over water, but also at times in tamarisk bushes by riversides, or among reeds, and in rank growth of *Epilobium* and other marsh-plants. Built of dead grasses, leaves, etc., with a neat cup lined fine grasses and hair, sometimes feathers. *Eggs*.—4-5, deep brick-red, but fading to purplish-pink. Average of 100 eggs, 18×13.9 mm. *Breeding-season*.—Last week April and early May: apparently second brood about end May or early June at times.

FOOD.—Mainly insects, but Gerbe also records worms and Lynes found small mollusca (snails), and a few green seeds in stomach as well as insects.

DISTRIBUTION.—*England*.—Three. A male Battle (Sussex) May 12, 1904 (*ut supra*). A female, Whatlington (Sussex), September 1, 1906 (J. B. Nichols, *Brit. B.*, 1, p. 185). A male, Westfield (Sussex), June 21, 1916 (G. V. Webster, *t.c.*, X., p. 137).

DISTRIBUTION.—*Abroad*.—South France, Spain and Portugal, Mallorca, Italy, Sicily, Corsica and Sardinia, north-west Africa, south-east Europe and Asia Minor to Syria, and apparently Caucasus and Crimea. Replaced by slightly paler form in Palestine, and by a still paler and much larger one in Khirgiz Steppes and east Persia to Turkestan. The form from Mallorca has also been separated, but is unknown to us, while the supposed Balkan form is not separable.

Genus LUSCINIOLA Gray.

LUSCINIOLA Gray, List. Gen. B., 2nd ed., p. 28 (1841—Monotype: *L. melanopogon*).

Plumage soft, tail with 12 rectrices, rounded, nearly as long as wing. First primary less than half 2nd, inner web attenuated from the middle, much longer than primary-coverts, 2nd much shorter than 3rd; 3rd, 4th and 5th about equal and longest. Bill thin and pointed. Rictal bristles small and not very obvious. One species in two subspecies. (The other Palæarctic and Indian species which have been included by Seebohm and recent ornithologists in this genus differ by having comparatively shorter wings, more graduated tails and less powerful claws. They cannot reasonably be separated from the African *Bradypterus*, which, in the *Catalogue B. Brit. Mus.*, was placed in another family in another volume).

LUSCINIOLA MELANOPOGON

136. *Lusciniola melanopogon melanopogon* (Temm.).—THE MOUSTACHED WARBLER.

SYLVIA MELANOPOGON Temminck, Pl. Col. 245, fig. 2 (1823—Campagna near Rome).

Lusciniola m. melanopogon, H. W. Ford-Lindsay, *Brit. B.*, ix, p. 197.

DESCRIPTION.—*Adult male and female. Winter.*

—Forehead, crown and nape black, each feather fringed chestnut-brown; mantle and scapulars chestnut-brown, streaked black; back, rump and upper tail-coverts uniform chestnut-brown; narrow stripe from nostrils, over and behind eye white; lores and under eye black, feathers tipped whitish; ear-coverts black-brown; sides of neck chestnut-brown; chin, throat, centre of belly, axillaries and under wing-coverts white; breast, sides, flanks and under tail-coverts chestnut-buff varying somewhat in intensity (upper breast with varying number of narrow brown streaks); tail-feathers black-brown fringed chestnut-brown; primaries black-brown narrowly fringed on inner webs whitish and on outer pale brown; secondaries same but with more chestnut-brown fringes to outer webs; primary-coverts as primaries; greater and median coverts as secondaries; lesser coverts uniform brownish-black. This plumage is acquired by complete moult in early autumn. *Summer.*—The body-feathers are moulted February-March, but not wings or tail.



Moustached Warbler
(*Lusciniola m. melanopogon*), tail from below.

Plumage as winter. Abrasion makes crown more uniform black, mantle more clearly streaked and under-parts whiter, breast becoming white as throat and belly and faint streaks wearing completely away.

Nestling.—(Not examined.)

Juvenile.—Like adult but brown of upper-parts more tawny less deep chestnut.

First winter.—Like adult. The juvenile body-plumage is moulted June-August, but not wing or tail-feathers.

Measurements and structure.—♂ wing 53-62 mm., tail 48-55, tarsus 19-22, bill from skull 12-14 (12 measured). ♀ wing 52-59. Primaries: 1st 5-8 mm. longer than longest primary-covert, 4th and 5th longest, 3rd sometimes as long, but usually 1-2 mm. shorter, 6th 1-3 shorter, 7th 3-5 shorter, 2nd usually equal to 8th, occasionally as long as 7th or as short as 9th; 3rd to 5th emarginated outer webs. Tail much rounded, two central pairs being longest and rest graduated, outermost 9-11 mm. shorter than central pair, 12 feathers, tips rounded. Bill fine and compressed. Two or three short rictal bristles but no nasal bristles. Nostrils uncovered.

CHARACTERS AND ALLIED FORMS.—*L. m. mimica* (west Turkestan, Persia), is larger and considerably paler brown on upper-parts and whiter on under-parts. Superficially somewhat resembles Sedge-Warbler but crown is blacker, upper-parts more chestnut, eye-stripe whiter, under-parts more rufous-buff not so yellowish, bill is more compressed not so flat and wide, first primary is much larger and wing much rounder, tail-feathers more graduated.

FIELD-CHARACTERS.—Darker crown and upper-parts contrasted with prominent white eye-stripe and pure white under-parts distinguish it from Sedge-Warbler. Also has generally slimmer appearance and habit of raising tail to vertical position. Song sweeter, and more refined than Sedge-Warbler's and frequently opens with a succession of some four musical, high-pitched notes after manner of Nightingale. Alarm note a jarring rattle (H. Lynes).

BREEDING-HABITS.—A swamp-haunting species, always breeding over moderately shallow water, nesting in the knots made by fishermen tying reeds together in Hungary and in small bushes growing in water or at bases of reed-clumps in Sicily (Lynes). *Nest*.—Built of water-grasses, bits of sedge, lined reed-flower, bents and sometimes feathers. *Eggs*.—Normally 4-5, rarely 6 and often 3 in late broods. Much like Sedge-Warbler's, but average lighter: evenly speckled with olive-brown and ashy, almost obscuring ground, and generally black hairstreak at end. Average of 90 eggs, 17.8×13.1 mm. *Breeding-season*.—End April to early June in Hungary: probably early April onwards in Sicily. Double brooded.

FOOD.—Little information available, but said to feed on diptera and small coleoptera.

DISTRIBUTION.—*England*.—One. Male, St. Leonards-on-Sea (Sussex), April 12th, 1915 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Breeds in south-east Spain, Italy, Sicily, and Hungary, probably in Dalmatia and Bosnia and perhaps in south France and Egypt. Hungarian birds winter in Greece. From Kirghiz Steppes and west Turkestan to Persia replaced by an allied race, wintering in India.

Genus LOCUSTELLA Kaup.

LOCUSTELLA Kaup, Skizz. Entw. & Natürl. Syst. Eur. Thierw., pp. 115, 191 (1829—Type by tautonymy: *Sylvia locustella*=*L. naevia*).

Somewhat resembling *Cettia*, but differing by having 12 rectrices and the plumage less silky. Rictal bristles obsolete, otherwise much resembling *Acrocephalus*. Bill slender and pointed. Under tail-coverts very long, as long as or longer than lateral rectrices, tail strongly rounded, almost graduated. Sexes alike. Nine species in Palæarctic region, in winter to tropical Asia, Sunda Islands and Moluccas, and to Africa. Double moult. Nests on or near ground, open, eggs more or less pinkish, spotted.

Key to species of genus LOCUSTELLA.

- | | | | |
|-----|--|---|---------------------------------|
| 1 { | Upper-parts distinctly spotted | 2 | |
| | Upper-parts not distinctly spotted | | <i>L. luscinioides</i> , p. 326 |
| 2 { | Rectrices with white tips and black ante- | | |
| | apical bar from below | | <i>L. certhiola</i> , p. 328 |
| | Rectrices uniform | 3 | |
| 3 { | Wing about 60–66 mm. | | <i>L. naevia</i> , p. 330 |
| | Wing about 53–57 mm. | | <i>L. lanceolata</i> , p. 333 |

LOCUSTELLA LUSCINIOIDES

137. *Locustella luscinioides luscinioides* (Savi) — SAVI'S WARBLER.

SYLVIA LUSCINIOIDES Savi, Nuovo Giorn. Litter. vii, p. 341 (1824—Pisa). *Acrocephalus luscinioides* (Savi), Yarrell, i, p. 389; *Locustella luscinioides* (Savi), Saunders, p. 91.

DESCRIPTION (Plate 12).—*Adult male and female*. *Winter*.—Whole upper-parts uniform dark reddish-brown, sometimes with an olivaceous tinge and in certain lights faint, narrow, transverse bars are observable; short, indistinct eye-stripe buff; lores dusky;

ear-coverts pale brown somewhat speckled with buff; chin, centre of throat and centre of belly white or buffish-white; rest of under-parts pale reddish-brown, at base of throat sometimes some darker streaks, tips of under tail-coverts paler; tail as rest of upper-parts, but with obsolete transverse bars more easily observable in some specimens than in others; wing-feathers and wing-coverts as rest of upper-parts but inner webs of wing-feathers narrowly fringed very pale brown. This plumage is acquired by complete moult in late summer. *Summer*.—Possibly moults early in year, but no specimen in moult has been examined. Abrasion has little effect, but upper-parts become slightly paler and under-parts paler with white of throat and centre of belly rather purer and more extensive.

Nestling.—A feathered skin has sparse reddish-brown down in supra-orbital, occipital, humeral and spinal tracts.

Juvenile.—Like adult, but rather darker and more reddish brown on upper parts.

First winter.—Apparently like adult, but no moulting specimen examined.

Measurements and structure.—♂ wing 67-71 mm., tail 54-60, tarsus 20-23, bill from skull 12-14 (12 measured). ♀ wing 67-70. Primaries: 1st minute, 1-5 mm. shorter than primary-coverts, 2nd longest, 3rd .5-3 shorter, 4th 3-6 shorter, 5th 5-9 shorter, 6th 8-11 shorter; no emargination on outer webs, and no notch on inner web of 2nd; outer primaries distinctly curved inwards. Secondaries about 2 mm. shorter than 10th primary, tips slightly rounded. Tail much rounded, 12 feathers, two central pairs about equal and longest, rest graduated, outermost being 14-18 mm. shorter than central, tips of feathers rounded. Under tail-coverts very long, reaching beyond the outer tail-feathers. Bill fine and compressed. Nostrils bare. A few *minute* rectal bristles. Legs and feet fairly strong.

Soft parts.—Bill: upper mandible dark brown, lower pale brown; legs and feet pale brown; iris brown.

CHARACTERS AND ALLIED FORMS.—*L. l. fusca* (Transcaspia, Turkestan) is considerably paler, less rufous and more tinged olive on upper-parts and paler and whiter on under-parts. At once distinguished from other British *Locustellæ* by its uniform upper-parts. Superficially somewhat resembles *Cettia cetti*, but under-parts are more rufous, less white and less grey-brown, tail has 12 instead of 10 feathers and wing-formula quite different.

FIELD-CHARACTERS.—Haunts marshes and reed-beds and is not shy. Male in breeding-season reels for long periods, perched high up on reed-stem, with widely opened mouth, turning head from side to side. Can only be confused with Grasshopper- and River-Warblers, but is at once distinguished from former by uniform colour of upper-parts and entire absence of spots, and from latter by absence of throat-streaks (F.C.R.J.).

BREEDING-HABITS.—Haunts lagoons and marshes with thick growth of reeds, sedge and marsh vegetation. *Nest.*—Well concealed among masses of dead reed and clumps of sedge, and invisible from above, built like a tiny Rail or Waterhen's nest of dried leaves of *Glycerium*, but not invariably, as some nests are neatly lined with much finer leaves and marsh grasses. *Eggs.*—4 to 6, greyish-white, closely freckled all over with fine spots of grey-brown and violet shell-marks. Average of 100 eggs 19.7×14.5 mm. *Breeding-season.*—From mid-April in south Europe through May, but second half of May in central Europe. Probably double brooded.

FOOD.—Mainly insects and their larvæ, especially marsh-haunting species, coleoptera, lepidoptera, diptera, neuroptera, etc. Small worms also said to be taken.

DISTRIBUTION.—*England.*—Formerly regular summer-resident in small numbers fens of Norfolk, Cambs., and Hunts., but has not appeared since 1856. A bird *thought* to be of this species seen in Humber district May 24, 1897, and another *said* to have been seen in Bucks., and another in Suffolk. One obtained West St. Leonards (Sussex), May 30, 1916 (J. B. Nichols, *Brit. B.*, X., p. 167). *Scotland.*—One obtained and another seen Fair Isle, May 14, 1908 (W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1909, p. 73; *Studies in Migration*, II, p. 135).

DISTRIBUTION.—*Abroad.*—Spain, parts of France, Holland, and near Geldern in the Rhenish Provinces, Italy, Sicily, Galizia, Poland, parts of Russia, Hungary, and valley of Danube, also Egypt, and north-west Africa. Winter-quarters not precisely known, but recorded Khartoum (in March). Replaced by paler race in Transcaspiia and Turkestan.

LOCUSTELLA CERTHIOLA

138. *Locustella certhiola* (Pall.)—PALLAS'S GRASSHOPPER-WARBLER.

MOTACILLA CERTHIOLA Pallas, Zoogr. Rosso-Asiat., I, p. 509 (1827—Transbaikalia).

Locustella certhiola Pall., Grant, Bull. B.O.C., XXIII, p. 18; Barrington, *Brit. B.*, II, p. 230.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head brown, scarcely streaked; crown, nape and mantle broadly streaked brown-black, feather-edges being brown to pale brown on crown and mantle, and more greyish on nape; back of neck brown with fewer streaks; back and rump rufous-brown, sometimes without streaks but usually with a few; upper tail-coverts rufous-brown, usually with somewhat drop-shaped black mesial streaks, but occasionally



(HALF NATURAL SIZE.)

1, Savi's Warbler (*Locustella l. luscinioides*). 2, Grasshopper-Warbler (*L. n. naevia*) ♂ summer. 3, Lanceolated Warbler (*L. lanceolata*) ♂ summer. 4, Barred Warbler (*Sylvia n. nisoria*) ♂ 1st winter. 5, Orphean Warbler (*S. h. hortensis*) ♂. 6, Garden-Warbler (*S. borin*). 7, Blackcap (*S. a. atricapilla*) ♂.

almost without streaks ; distinct stripe from nostrils over and behind eye creamy-white ; lores dark brown, tipped greyish-white ; under eye and lower part of ear-coverts creamy-buff, minutely spotted dark brown, upper-part of ear-coverts brown ; chin, throat, centre of breast and belly, axillaries and under wing-coverts white, often with some minute black spots on sides of throat and on upper-breast and very occasionally on centre of throat ; upper-breast, sides and flanks buff (occasionally one or two short black streaks on flanks) ; under tail-coverts same with whitish tips ; tail : central pair brown with small greyish-white tips, divided by brown-black shaft-line and with a brown-black wedge-shaped penultimate mark, rest with larger dull white



Pallas's Grasshopper-Warbler
(*Locustella certhiola*). Tail from below.

tips and the black extended over most of the feathers in the shape of wide, coalesced bars, leaving only edges brown ; wing-feathers dark brown, narrowly edged on inner webs dull white and on outer webs pale reddish-brown, 1st and 2nd primaries with outer edge brownish-white, innermost secondaries brown-black, evenly margined with pale reddish-brown, becoming whitish on innermost feather ; all wing-coverts as innermost secondaries but primary-coverts with very narrow margins. This plumage is acquired by complete moult August-December. *Summer*.—The body-feathers are probably moulted in March or April, but no specimens are available for examination. In May specimens the body-feathers appear to be new. Coloration as winter on upper-parts, but chin, throat and middle of breast and belly purer white, contrasting more strongly with buffish-brown sides and flanks.

Nestling.—(Not examined).

Juvenile.—Upper-parts as adult, but with rather a more narrowly streaked appearance, especially on rump ; under-parts suffused with pale yellow, sides of throat, lower-throat and upper breast with numerous short (rather spot-like) black-brown streaks flanks usually also with some similar streaks ; tips of tail-feathers smaller and less white, margins of innermost secondaries duller, not so whitish.

First winter.—Like adult, but dark streaks on upper-parts slightly narrower and pale edgings slightly broader ; under-parts sometimes tinged pale yellow ; margins of innermost secondaries as in juvenile. The juvenile body-plumage, lesser and median wing-coverts, and sometimes in any case the tail-feathers are

moulted August-December, but not wing-feathers or primary-coverts, and apparently not greater coverts. *Summer*.—Probably a moult in March and April, after which it would appear to become indistinguishable from adult. No spring moulting specimens, however, have been available.

Measurements and structure.—♂ wing 61-68 mm., tail 49-54, tarsus 20.5-23, bill from skull 12-14.5 (12 measured). ♀ wing 59-65. Primaries: 1st equal to or 1-2 mm. shorter or longer than primary-coverts, 3rd longest, 2nd and 4th 2-4 shorter, 5th 3-6 shorter, 6th 5-10 shorter; 3rd emarginated outer web and distinct notch on inner web of 2nd. Outer primaries slightly curved, but not so much as in *L. luscinioides*. Secondaries slightly shorter than 10th primary, tips rounded. Tail as *L. luscinioides*, but tips of feathers more pointed. Rest of structure as *L. luscinioides*.

Soft parts.—Bill black-brown, basal portion of lower mandible flesh-brown; legs and feet pale flesh-brown; iris reddish-brown.

CHARACTERS.—No subspecies. Easily distinguished from other British *Locustellæ* by whitish tips to tail-feathers.

BREEDING-HABITS.—Nests much like our Grasshopper-Warbler, in tussocks of grass or rank vegetation in wet and moss-grown meadows. *Nest*.—Well concealed in grass, with side entrance; built of mosses and grass. *Eggs*.—Normally 5, but ranging from 4 to 6, thickly covered so as to obscure the ground, with pinkish-brown spots, occasionally a dark hair-streak. Average of 16 eggs, 18.8×13.7 mm. *Breeding-season*.—June.

FOOD.—Lynes records larvæ and small insects in stomach.

DISTRIBUTION.—*Ireland*.—One. Male, Rockabill Light (Dublin), Sept. 28, 1908 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Siberia and Altai to Pacific, wintering in India, Burma, Greater Sunda and Natuna Islands. Once Heligoland.

LOCUSTELLA NÆVIA

139. *Locustella nævia nævia* (Bodd.)—THE GRASSHOPPER-WARBLER.

MOTACILLA NÆVIA Boddaert, Tabl. Pl. Enl., p. 35 (1783—ex Daubenton pl. 581, 3: Italy).

Acrocephalus nævius (Boddaert), Yarrell, 1, p. 384; *Locustella nævia* (Boddaert), Saunders, p. 89.

DESCRIPTION (Plate 12).—*Adult male and female*. *Winter*.—Whole upper-parts yellowish olive-brown, each feather with dark brown central streak; rump rather less streaked than rest of upper-parts; upper tail-coverts more reddish-brown (not so olive) and without

dark streaks ; lores greyish, tipped dusky ; faint, short, pale streak behind eye ; ear-coverts olive-brown, somewhat speckled yellowish-buff ; chin and centre of throat, breast and belly white or pale buffish-yellow ; sides of throat, sides of breast, flanks and band across upper-breast buff or yellowish-buff ; throat and flanks with varying amount of dark brown spots and streaks, and often with no streaks ; under tail-coverts brownish-buff, each feather marked brown centrally ; axillaries and under wing-coverts pale buff ; (N.B. Variation in general colours of under-parts and in streaking is entirely individual) ; tail reddish-brown, with obsolete transverse bars scarcely showing in some specimens but more clearly in others ; wing-feathers dark brown, outer webs narrowly edged pale, and slightly reddish, brown, inner webs narrowly edged dull brownish-white ; all wing-coverts as rest of upper-parts but usually not quite so olive. This plumage is acquired by complete moult in August-September. *Summer*.—A complete moult probably takes place in February or March but no specimens collected from December to March have been available. In April specimens the feathers appear to be new.* Coloration as winter. Abrasion gradually makes upper-parts less olive, and more streaked, and under-parts paler and less yellowish.

Nestling.—Down, dusky-grey, fairly long and plentiful ; distribution, inner supra-orbital, occipital, spinal and humeral. Mouth, inside yellow, olive-green at sides of roof, two black spots at base of tongue and another at tip, externally gape-flanges yellowish-white.

Juvenile.—Like adult but upper-parts more reddish-brown with scarcely any olive tinge ; buff of under-parts more dusky.

First winter.—Like adult but upper-parts rather browner and less olive but not so reddish as juvenile ; under-parts varying as in adult both as regards colour and presence or absence of streaks on throat and flanks. The juvenile body-plumage, tail-feathers and apparently lesser and median wing-coverts are moulted August-October, but not apparently greater wing-coverts, nor primary-coverts or wing-feathers.

Measurements and structure.—♂ wing 60-67 mm., tail 51-59, tarsus 19-21, bill from skull 11.5-13.5 (12 measured). ♀ wing 59-66. Primaries : 1st minute, equal to or 1-2 mm. shorter or longer than primary-coverts, 3rd longest, 2nd .5-4 shorter, 4th .5-2 shorter, 5th 3-5 shorter, 6th 5-8 shorter ; 3rd emarginated on outer web. Rest of structure as *L. certhiola*.

Soft parts.—Bill dark brown, lower mandible pale yellowish-brown ; legs and feet pale yellowish-brown ; iris brown.

CHARACTERS AND ALLIED FORMS.—*L. n. straminea* (Urals, Trans-

* In *L. naevia straminea* there is a complete moult in March-April, and it is unlikely that one subspecies moults differently from another.

caspia, Turkestan) has more olive upper-parts and rather shorter wing. For differences of *L. lanceolata* see under that species.

FIELD-CHARACTERS.—Chiefly a dweller in fens and bogs, but also frequents gorse-covered commons, heather, and young plantations. Essentially a skulking creature, creeping like a mouse in tangled herbage, but readily recognized if seen by its greenish-brown plumage, streaked dorsally, obscure eye-stripe and rounded tail. Would often evade notice but for song of male, usually uttered from top of a bush or twig, a rapid trill, rising and falling, pitched so high as to be inaudible to some ears, and often maintained without a break for two minutes or more. It has some resemblance to a line running quickly off an angler's reel, and is unlike that of any other British breeding bird. Alarm-note a sharp "tchick" repeated several times.

BREEDING-HABITS.—Nests on edges of thickets on commons or in clumps of rank grass and rushes in marshes, also in osier beds and plantations of saplings. *Nest.*—Usually carefully hidden in tussock, sometimes on ground or raised a foot or so above it; built of dead grasses and stalks, the bird entering and leaving by a run. *Eggs.*—Normally 6, very rarely 7, sometimes 5, thickly spotted with brownish-red on a creamy ground, often forming a zone and generally with a dark hair-streak. Exceptionally eggs with large purple-red blotches have been taken. Average of 100 eggs, 17.6×13.6 mm. *Breeding-season.*—About last week of May as a rule or early June: as eggs have been found late in July or even August a second brood may sometimes be reared.

FOOD.—Insects and their larvæ, including many found on marsh vegetation; coleoptera, lepidoptera, diptera, neuroptera, etc. Saunders says dragon-flies are taken on the wing and Miss Turner reports young fed on small caterpillars, flies and woodlice.

DISTRIBUTION.—*England, Wales, and Ireland.*—Summer-resident, local, but fairly evenly distributed in suitable localities, rare Cornwall and very local Wales. *Scotland.*—Local and thinly distributed in south-west and Clyde area, but breeding at wide intervals as far north as Arisaig (south-west Inverness) and Skye. On east side breeds locally as far as Perth, and has been recorded as nesting at Pitlochry (Perth.), and even as far north as Elgin, north of which on mainland not noted even as vagrant, but has occurred four times in spring Fair Isle. Has once occurred as far west as Skerryvore (off Tiree), but not in O. Hebrides.

MIGRATIONS.—*Great Britain.*—Early arrivals in spring of summer-residents third week April (early date 9) main body begins to arrive towards end of fourth week, and continues to third week May. Some evidence of passage-movements by both east and west coast routes mid-April to mid-May. Departure of summer-residents

begins early Aug. and lasts to end of Sept. Similar evidence of east and west coast passage-movements during same period, but mainly during middle fortnight Sept.

DISTRIBUTION.—*Abroad.*—Middle and south Europe generally, north to south Norway and Finland, south to north Spain, middle Italy, and Slavonia, wintering in north-west Africa, and probably south Spain. Replaced by *L. n. straminea* from Caucasus and Orenburg to Altai and Turkestan.

LOCUSTELLA LANCEOLATA

140. *Locustella lanceolata* (Temm.)—THE LANCEOLATED WARBLER.

SYLVIA LANCEOLATA Temminck, Man. d'Orn., ed. II, iv, p. 614 (1840—"Mainz?" Erroneous locality. Typical locality: Russia).
Locustella lanceolata, Caton-Haigh, Brit. B., III, p. 353.

DESCRIPTION (Plate 12).—*Adult male and female.* *Winter.*—Whole upper-parts brown to yellowish-brown broadly streaked black-brown; upper tail-coverts darker brown and more colour of tail, usually with a few broad black-brown streaks, but sometimes without streaks; somewhat indistinct, narrow streak from nostrils to eye and behind eye cream-colour; lores and under eye dusky; ear-coverts brown somewhat speckled cream-colour; chin, upper-throat and centre of belly white tinged sometimes pale yellow and sometimes pale buff, sometimes a few brown-black spots on chin and throat; lower-throat and breast more strongly tinged buff and with conspicuous, short, brown-black streaks; sides, flanks and under tail-coverts buffish-brown with longer and wider brown-black streaks, longer under tail-coverts, sometimes streaked, often unstreaked, sometimes only with dark shaft-lines and with whitish tips; under wing-coverts and axillaries pale sandy-buff; tail dark brown with obsolete transverse bars observable in some specimens; primaries and secondaries brown, inner webs narrowly edged whitish and outer webs pale brown, innermost secondaries black-brown with narrow pale brown margins; all wing-coverts as rest of upper-parts. This plumage is acquired by complete moult in October-November. *Summer.*—A complete moult (including wings and tail) takes place in March-April. Coloration as winter. Abrasion has little effect, but under-parts gradually become rather clearer white.

Nestling.—(Not examined).

Juvenile.—Like adult but rather darker upper-parts; chin and upper-throat considerably spotted; streaks on breast rather thicker than is usual in adults.

First winter.—Like adults. The juvenile body-plumage, lesser and median wing-coverts and tail are moulted Sept.-Dec.

(occasionally Jan.) but not wing-feathers, primary-coverts or greater wing-coverts.

Measurements and structures.—♂ wing 53-59 mm., tail 42-50, tarsus 18-19, bill from skull 10.5-12. ♀ wing 52-58. Primaries: 1st equal to or 1-2 mm. shorter or longer than primary-coverts, 3rd longest, 2nd occasionally equal but usually 1-2 mm. shorter, 4th 1-3 shorter, 5th 3-5 shorter, 6th 4-7 shorter; 3rd emarginated outer web. Rest of structure as *L. certhiola*.

Soft parts.—Bill dark brown, under mandible flesh-brown; legs and feet pale yellowish-flesh; iris dark brown.

CHARACTERS.—No subspecies. Differs from *L. naevia* in being smaller, upper-parts less olive and more broadly streaked, under-parts whiter and more streaked, especially on flanks.

BREEDING-HABITS.—Breeds in marshy spots. *Nest.*—Well hidden in tussock and invisible from above; built of dead grasses, and stalks with moss and leaves in foundation. *Eggs.*—5, pinkish in ground-colour thickly spotted with reddish-brown and grey shell-marks. Average of 10 eggs, 17.7×13.5 mm. *Breeding-season.*—May and June.

FOOD.—Probably insects, but definite information lacking.

DISTRIBUTION.—*Great Britain.*—Three. Male, North Cotes (Lincs.), Nov. 18, 1909 (*ut supra*); one Pentland Skerries (Orkneys), Oct. 26, 1910; and one Fair Isle, Sept. 9, 1908 (W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1911, p. 71.)

DISTRIBUTION.—*Abroad.*—From Kamtschatka and north Japan to west Siberia, rare in Russia (Onega R.), wintering in south China, Borneo, Andamans, Burma and India. Accidental Heligoland and Dalmatia.

Genus ACROCEPHALUS Naum.

ACROCEPHALUS Naumann, *Naturg. Land.-u. Wasserv. Deutschl.*, Nachtrag iv, p. 199 (1811—Type by subsequent designation: *A. arundinaceus*).

Containing Reed-, Marsh-, Sedge-, and Aquatic Warblers, which have been split up into a number of genera, but by no means consistently. Bill varies from a somewhat broad and depressed one to a narrow one resembling that of a slender-billed *Sylvia*. A few, but distinct and fairly strong, rictal bristles. 1st primary narrow, stiff, and short, rarely longer than primary-coverts. Tail of 12 rectrices, well rounded or slightly graduated. Tarsus long, front generally divided into long scutes, but in old individuals of most species fused, except at base. Sexes alike, young not conspicuously different. Nests open, in most cases suspended on upright stems of reeds or bushes. Eggs spotted. Insectivorous. Double moult. Old World, wanting in America.

Key to species of genus ACROCEPHALUS.

- | | | | |
|-----|---|---|--------------------------------|
| 1 { | Top of head uniform | 2 | |
| | Top of head streaked | 5 | |
| 2 { | Much larger, wings over 80 mm. | | <i>A. arundinaceus</i> p. 335 |
| | Much smaller, wings under 80 mm. | 3 | |
| 3 { | 2nd primary shorter than 5th | | <i>A. dumetorum</i> , p. 344 |
| | 2nd primary longer than 5th | 4 | |
| 4 { | Attenuation of inner web of 2nd primary begins between tip of secondaries and 8th primary | | <i>A. scirpaceus</i> , p. 339 |
| | Attenuation of inner web of 2nd primary begins before tip of 8th | | <i>A. palustris</i> , p. 342 |
| 5 { | Conspicuous light line along middle of crown, upper tail-coverts distinctly spotted | | <i>A. aquaticus</i> , p. 349 |
| | No obvious light line along middle of crown, upper tail-coverts not distinctly spotted | | <i>A. schænobænus</i> , p. 346 |

ACROCEPHALUS ARUNDINACEUS

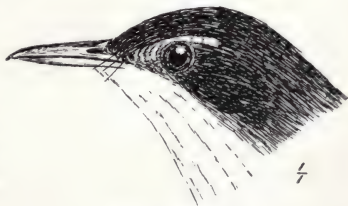
141. *Acrocephalus arundinaceus arundinaceus* (L.)—THE GREAT REED-WARBLER.

Turdus arundinaceus Linnæus, Syst. Nat., ed. x, i, p. 170 (1758—ex Klein : Danzig).

Acrocephalus arundinaceus (Linnæus), Yarrell, i, p. 364; *Acrocephalus turdoides* (Meyer), Saunders, p. 83.

DESCRIPTION.—*Adult male and female.* Winter. —

Whole upper-parts warm olive-brown, crown darker, and back, rump, and upper tail-coverts more tawny-brown; narrow stripe from nostrils, over and behind eye cream-colour; lores and ear-coverts brown; chin, throat, and centre of belly white with varying number of narrow brown



Great Reed-Warbler
(*Acrocephalus a. arundinaceus*).

shaft-streaks on feathers of lower-throat but sometimes these are absent; rest of under-parts, including under tail-coverts, under wing-coverts and axillaries creamy- to tawny buff, darkest on flanks; tail brown with narrow whitish tips; wing-feathers dark brown with small whitish tips and outer and inner webs narrowly edged pale brown; all wing-coverts as upper- parts with rather paler edges. This plumage is acquired by complete moult in Aug.-Nov. *Summer*—A complete moult (including

wings and tail) takes place Jan.-March. Plumage as winter, but streaks on lower-throat and upper-breast usually more numerous and prominent. Abrasion makes upper-parts more greyish-brown and under-parts whiter. N.B. In some individuals the wings and tail seem not to moult in autumn and in some they appear not to moult in spring; it is possible therefore that the wings and tail only moult once a year.

Nestling.—(Not examined.)

Juvenile.—Much like adult but more yellowish tawny-brown on upper-parts especially on rump; tips of tail-feathers and edges of secondaries and wing-coverts also more tawny; chin and throat tawny-buff not white and without streaks; rest of under-parts as adult but rather more tawny-buff.

First winter.—Differs from adult as the juvenile, rump especially being more yellowish than adult, chin and throat white but unstreaked. The juvenile body-plumage and lesser wing-coverts are moulted July-Sept. (often not completely) but not rest of wings or tail. *Summer*.—A complete moult (including wings and tail) takes place Jan.-March and after this they become like adult.

Measurements and structure.—♂ wing 90-103, tail 68-81, tarsus 27-31, bill from skull 21-24 (12 measured). ♀ wing 88-94. Primaries: 1st minute, half to three-quarters as long as primary-coverts, 3rd longest, 2nd .5-3 mm. shorter, but exceptionally equal to 3rd, 4th 2-4 shorter than 3rd (always shorter than 2nd), 5th 5-7 shorter, 6th 9-11 shorter; 3rd emarginated on outer web, 2nd with notch on inner web. Secondaries 2-3 mm. shorter than 10th primary, tips rounded. Tail rounded, 12 feathers, central pair longest, rest graduated, outermost being 8-12 mm. shorter than central, tips of feathers rounded, but sometimes inclined to be pointed. Under tail-coverts about three-fourths as long as outer tail-feathers. Bill very strong, broad at base, tip of upper mandible slightly hooked and projecting. Nostrils mostly bare. Three (occasionally four) strong rictal bristles on each side.

Soft parts.—Bill: upper mandible and tip of lower dark brown, rest of lower pinkish-flesh; legs and feet pale brownish-grey; iris yellowish-sepia.

CHARACTERS AND ALLIED FORMS.—For differences of *A. a. orientalis* see under that form, *A. a. zarudnyi* (Transcaspia, Turkestan) is more olive on upper-parts and paler on underparts. *A. stentoreus stentoreus* (Egypt, Palestine) has 2nd primary shorter than 5th, 3rd and 4th are emarginated on outer webs, and 2nd and 3rd have notch on inner webs, *A. s. brunnescens* (Transcaspia, Turkestan, Persia) is similar to last but paler and with a shorter and thicker bill.

FIELD-CHARACTERS.—Habits and coloration much as Reed-Warbler, but at once distinguished by large size. Song uttered from reeds or

occasionally from low tree near reeds, is very loud and guttural and almost frog-like—"karra, karra, karra, keek" (H.F.W.).

BREEDING-HABITS.—Usually found in reed-beds or sallow bushes mixed with reeds. *Nest.*—Built round reed-stems growing in water or among branches of sallows at varying heights, often 2 to 4 ft. from water but exceptionally as much as 8 ft. above it. Like Reed-Warbler's but much larger, built of reed and sedge leaves, roots, etc., lined reed flowers, down, occasionally hairs or feathers, with deep cup. *Eggs.*—4 to 6, ground bluish or greenish, boldly blotched with dark umber or blackish and ashy shell-marks. Average of 100 eggs, 22.5×16.2 mm. *Nesting-season.*—From mid-May in south Europe and about second week in June in central Europe. *Incubation.*—About 14 days. One brood.

FOOD.—Marsh-haunting insects and their larvæ: coleoptera (especially *Donacia*), neuroptera (Odonata, Perlidæ, Ephemeridæ, etc.) and diptera. Also aphides, spiders (up to great size according to Lynes), and jelly-like substance, probably eggs of *Limnæa stagnalis* (Saxby). Said also to take elder and other berries in autumn (Naumann).

DISTRIBUTION.—*England.*—About ten authentic occurrences besides other unsubstantiated records. Near Newcastle (Durham), May 28, 1847; Sittingbourne, May 4, 1853, and Wingham (Kent), Sept. 14, 1881; Godalming (Surrey), spring, 1858; Ellesmere (Salop), about 1886; one heard Tetney (Lincs.), July 28th, 1897; Ringwood, June 3, 1884, and Christchurch (Hants.), May 10, 1900; St. Leonards, Sept. 25, 1903, and Sept. 12, 1906, and Bexhill (Sussex), May 1, 1905; one seen Horning (Norfolk), Aug. 1906.

DISTRIBUTION.—*Abroad.*—Middle and south Europe to north-west Africa, eastwards at least to the Ural and (locally) west Siberia, north to Baltic and Russian Baltic provinces, rare visitor to south Sweden. Winters in tropical Africa south to Natal; in Persia on migration. Accidental Canaries. Replaced by another race from Volga delta eastward to Transcaspia and Turkestan and by *A. a. orientalis* in south-east Siberia, north China, Japan, and Corea.

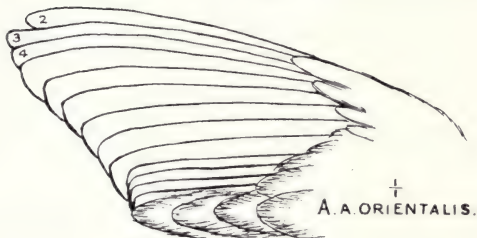
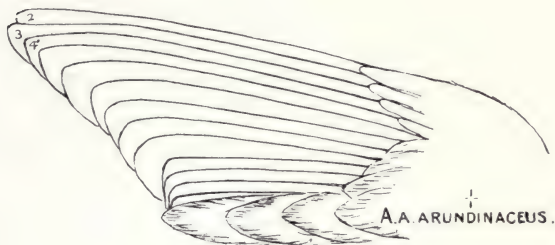
142. *Acrocephalus arundinaceus orientalis* (Temm. & Schleg.) —THE EASTERN GREAT REED-WARBLER.

SALICARIA TURDINA ORIENTALIS Temminck & Schlegel, Siebold's Fauna Japon., Aves, p. 50, pl. XX B (1847—Japan, Borneo, Celebes, Sumatra).
Acrocephalus arundinaceus orientalis, J. B. Nichols, Brit. B., x, p. 254.

DESCRIPTION.—*Adult male and female. Winter and summer.*—Like *A. a. arundinaceus* and not to be distinguished by coloration. Complete moult July-December. Spring moult Feb.-April

confined to body-feathers, and in no case have wing-feathers or wing-coverts been found moulting, but in two examples new tail-feathers were growing.

Nestling.—(Not examined.)



Juvenile and first winter.—As described under *A. a. arundinaceus*.

Measurements and structure.—Wing shorter than in *A. a. arundinaceus*, 4th primary equal to or longer than 2nd, never shorter than 2nd as in *A. a. arundinaceus*. ♂ wing 80-92 mm., tail 66-77, tarsus 27-30, bill from skull 21-24 (12 measured). ♀ wing 77-84. Primaries: 1st minute, half to three-quarter as long as primary-coverts, 3rd longest, 2nd 1-4 mm. shorter, 4th occasionally equal to 3rd, but usually 1-2 mm. shorter, usually longer than 2nd, but occasionally equal, never shorter, 5th 2-5 shorter, 6th 5-8 shorter. Rest of structure as in *A. a. arundinaceus*.

Soft parts.—As in *A. a. arundinaceus*, but legs and feet lead-grey or bluish-grey.

BREEDING-HABITS.—Haunts reed-beds like western race. *Nest*.—Very similar to that of Great Reed-Warbler, built around two or three reed-stems, growing in water. *Eggs*.—4-5, rarely 6; also similar but smaller on average, somewhat dingier in colouring, with

browner ground-colour and less blue, and markings smaller. Average of 42 eggs, 21.4×15.5 mm. *Breeding-season*.—June.

FOOD.—Probably very similar to that of the western race, but little exact data available. Lynes found beetles in stomach.

DISTRIBUTION.—*England*.—One. Male at West St. Leonards-on Sea (Sussex), Aug. 24, 1916 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Breeds in south-east Siberia, west as far as the Argun River, in the oases of Central Asian desert, north and middle China to the Yang-tse-kiang and Fokien, in Corea and Japan. Migrant, passing through China and wintering as far south as the Philippine and Sunda Islands and even Celebes and the Moluccas, west to the Malay Peninsula and Andamans.

ACROCEPHALUS SCIRPACEUS

143. *Acrocephalus scirpaceus scirpaceus* (Herm.) — THE REED-WARBLER.

TURDUS SCIRPACEUS Hermann, *Observ. Zool.*, p. 202 (1804—Alsace). *Sylvia strepera* Vieillot, *Nouv. Dict. d'Hist. Nat.*, nov. éd., xi, p. 182 (1817—France).

Acrocephalus arundinaceus (Brisson nec Newton), Seeböhm, *Hist. Brit. B.*, i, p. 367 (erroneous). (See also Fleming, Selby, and others.)

Acrocephalus streperus (Vieillot), Yarrell, i, p. 369; Saunders, p. 79 *Hand-List B.B.*, p. 63 (1912).

DESCRIPTION.—*Adult male and female*. *Winter*.—Whole upper-

parts warm brown, rather dark with yellowish-rusty tinge, rump and upper tail-coverts paler and more yellowish-rusty; narrow and somewhat ill-defined stripe from nostrils, over and slightly behind eye whitish cream-colour; lores and ear-coverts pale brown;

chin, throat and centre of belly white; breast, sides and under tail-coverts very pale buff; flanks dark buff; axillaries and under wing-coverts buffish-white; tail dark brown with very narrow whitish-cream-coloured tips and fringes to inner webs; wing-feathers darker brown with very narrow pale brown tips and narrow pale brown fringes to outer webs and whitish fringes to inner webs; wing-coverts as mantle. This plumage is acquired by complete moult June-Sept. *Summer*.—A complete moult (including wings and tail) takes place Dec.-Jan. New plumage as winter. Abrasion makes under-parts whiter and upper-parts slightly less tinged with rust-colour.

Nesting.—Down absent Mouth, inside orange-yellow two



Reed-Warbler (*A. s. scirpaceus*).

long oval, lateral black spots at base of tongue ; externally flanges pale yellow.

Juvenile.—Upper-parts as adult but more rusty-brown, the rusty colour being especially noticeable on rump, wing-coverts and edges of innermost secondaries ; chin and throat dusky-buff (not white) ; breast, sides and flanks more dusky, not so clear a buff as in adult ; narrow rusty tips to tail-feathers.

First winter.—Like adults and very difficult to distinguish, but usually more rusty-brown on upper-parts and also on edges of innermost secondaries and greater coverts ; under-parts a shade darker buff, but these differences disappear by abrasion. The juvenile body-plumage and apparently lesser and median wing-coverts are moulted July-Sept.

Measurements and structure.—♂ wing 62-70 mm., tail 49-55, tarsus 23-24, bill from skull 15-17. ♀ wing 62-68. Primaries : 1st equal to, or 1-2 mm. shorter than primary-coverts, 3rd longest, 2nd 1.5-3 shorter (often equal to, sometimes shorter than and more rarely longer than 4th, exceptionally equal to 5th) 4th 1-3 shorter, 5th 3-5 shorter, 6th 5-8 shorter ; 3rd emarginated outer web, very rarely an indication of emargination on 4th ; 2nd with a notch on inner web falling usually between tip of 8th primary and tips of secondaries but very rarely as high as tip of 7th primary. Outer tail-feathers 5-8 mm. shorter than central. Tips of tail-feathers inclined to be pointed. Bill rather wide and flat at base, compressed and thin at tip. Otherwise as *A. a. arundinaceus*.

Soft parts.—Bill : upper-mandible dark brown, under-mandible pale flesh, sometimes yellowish ; inside mouth orange ; legs and feet brown ; iris pale brown.

CHARACTERS AND ALLIED FORMS.—*A. s. macronyx* (Transcaspia, Turkestan, Persia) is considerably paler and less reddish-brown on upper-parts and paler (less buff) on under-parts. For differences of *A. palustris* and *A. dumetorum* see "Description" and "Measurements and structure" under those species.

FIELD-CHARACTERS.—Seldom leaves cover of reed-beds, or osier-beds and riverside bushes which to a lesser extent constitute its haunts, among which it moves about with restless activity. Uniform brown upper-parts tinged with chestnut, nearly white under-parts, and obscure pale eye-stripe render it almost indistinguishable in field from rarer and more local Marsh-Warbler, which however frequents swampy thickets of meadowsweet and rank herbage rather than reed-beds. Song, uttered by day and night, is a babbling chatter, "churra, churra, churra," followed by a variety of rapid notes, far less melodious and imitative than song of Marsh-Warbler and lacking harsh notes of Sedge-Warbler. Call-note, "turr." Alarm-note a low croak.

BREEDING-HABITS.—Generally breeds in reeds on edge of stream

or in osiers, but occasionally in hedges or bushes at considerable distance from water. Also in rank marsh vegetation, nettles, willow herb, etc. *Nest*.—Cylindrical in shape, with deep cup, built on to and around reeds or branches, of grasses, *Confervæ*, reed-flowers, etc., lined variously with grasses and feathers, wool, hair, reed-tops, etc. *Eggs*.—Normally 4, occasionally 5, very rarely 6, greenish-white, blotched and marbled to varying degree with dark olive and ashy-grey. Varieties with almost white ground, boldly spotted, also with dark zone or brown caps recorded. Average of 100 British eggs, 18.3×13.6 mm. *Breeding-season*.—Variable, most birds lay in June, but a few in latter half May. Second brood apparently sometimes reared, as eggs taken in August.

FOOD.—Aquatic or marsh-haunting insects and their larvæ, chiefly diptera, neuroptera (smaller dragon-flies, stone-flies, etc.), lepidoptera, and coleoptera (especially *Donacia*). Spiders and aphides are also eaten, and according to Saunders slugs and worms. Also small molluscs (*Helix*) in stomach (Oldham). Naumann says currants, elderberries, fruit of bird-cherry and dogwood are also taken.

DISTRIBUTION.—*England and Wales*.—Summer-resident. By nature of its habitat local, but fairly distributed throughout south and midland England, except in north Devon, Cornwall, and Scilly Isles, where very rare. In south Wales very local (numerous only at Llangorse Lake), and not found in Pembroke, and in north Wales very local and rare except on Salop border, and not recorded Anglesey. In Derby breeds only in extreme south, but ranges further north on each side, being found in Lancs. and Yorks., but very locally, especially in north, where it is rare, but breeds in small numbers as far as Craven district, Nidd Valley and Ripon (once in Wensleydale) in west, and Redcar in east. Has been recorded as nesting once or twice in Lake District and Durham, but otherwise unknown north of Yorks. *Scotland*.—Fair Isle (Shetlands) two Sept. 1908, one Sept. 1909, one June 10, 1914. Aukerry (Orkneys) one Sept. 1912. *Ireland*.—One Cooling Bank Lightship (Wicklow), Nov. 3, 1907. One Rockabill Light (Dublin), Oct. 20, 1908. Two obtained and three others seen Tuskar Rock (Wexford), Sept. 19, 1911. [One said to have been shot near Dublin 1843, and another to have been heard on the Shannon.]

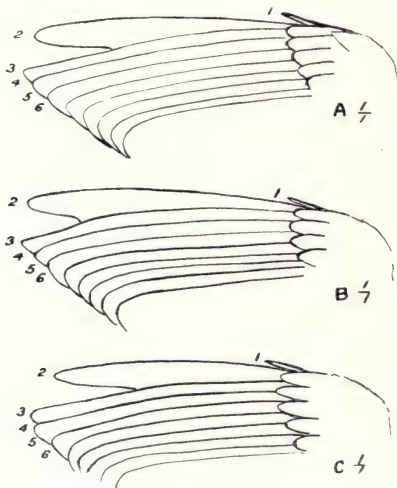
MIGRATIONS.—*England and Wales*.—Early arrivals of summer-residents third week April (early date 5th); arrival of main body begins end April or first few days of May and continues to middle or end of month. No evidence of any passage-movements. Departure of summer-residents begins early Aug., and lasts to end Sept. Some evidence of passage-movement down east coast in latter half Sept. (Late dates, Outer Dowsing Lt.-v. (Lines.), Oct. 6, 1909, Smalls Lt. (Pembroke), Oct. 17, 1908, Norfolk, Oct. 27, 1909.)

DISTRIBUTION.—*Abroad.*—South Sweden and Russian Baltic Provinces to Mediterranean and north-west Africa, wintering in Africa. Accidental Madeira. Replaced by closely-allied form from Lower Volga to Turkestan.

ACROCEPHALUS PALUSTRIS

144. *Acrocephalus palustris* (Bechst.) — THE MARSH-WARBLER.

SYLVIA PALUSTRIS Bechstein, Orn. Taschenb., p. 186 (1803—Germany).
Acrocephalus palustris (Bechstein), Yarrell, I, p. 373; III, p. viii;
 Saunders, p. 81.



A. Reed-Warbler (*A. s. scirpaceus*). B. Marsh-Warbler (*A. palustris*). C. Blyth's Reed-Warbler (*A. dumetorum*). Note differences in relative length of 2nd primaries and position of notch on inner web of this primary.

DESCRIPTION.—*Adult male and female. Winter.*—Very similar to *A. s. scirpaceus* but brown of upper-parts more greenish-olivaceous and without any rusty tinge, rump and upper tail-coverts paler and more olivaceous than rest of upper-parts but not rust-coloured as in Reed-Warbler; narrow edgings and tips of wing-feathers rather paler and more olivaceous; buff of under-parts and especially flanks usually paler and of a more yellowish rather than rusty shade. This plumage is acquired apparently by complete

moult in Aug.-Sept., but insufficient material is available to make certain. *Summer*.—A complete moult (including wings and tail) takes place apparently Feb.-Mar., but insufficient material is available to make certain. New plumage as winter but upper-parts rather more olivaceous. Abrasion makes upper-parts considerably paler and more greyish and rump pale earth-brown tinged olivaceous. In worn plumage more distinctly different from Reed-Warbler which does not become so greyish and is always rusty on rump.

Nestling.—(Not examined.)

Juvenile.—Specimens considered by their collectors to be of this species appear to be indistinguishable from juvenile Reed-Warblers.

First winter.—Apparently like adult, but no specimen in moult examined.

Measurements and structure.—♂ wing 66-72 mm., tail 51-56, tarsus 22-24, bill from skull 14-16 (12 measured). ♀ wing 64-72. Primaries: 1st equal to, or 1-5 mm. shorter or 1-2 longer than, primary-coverts, 3rd longest, 2nd 1-2 shorter (exceptionally equal to 3rd, usually equal to and very occasionally .5-1 shorter than 4th, always longer than 5th), 4th 1-2.5 shorter, 5th 4-5 shorter, 6th 6-9 shorter; 3rd emarginated outer web, no emargination on 4th; 2nd with a notch on inner web falling between tips of 6th and 8th and exceptionally 9th primaries. Outer tail-feathers 5-8 mm. shorter than central. Tips of tail-feathers inclined to be pointed. Bill rather wide and flat at base, compressed and thin at tip. Otherwise as *A. a. arundinaceus*.

Soft parts.—Bill: upper-mandible dark brown, under-mandible flesh; inside mouth yellow; legs and feet brownish-flesh or yellowish-flesh; iris olive-brown.

CHARACTERS.—No subspecies. Differs from *A. s. scirpaceus* in coloration and in 2nd primary being usually slightly longer comparatively and notch on inner web of 2nd primary usually nearer tip of feather. Differs from *A. dumetorum* chiefly in slightly longer wing and tail and in several details of wing-formula (cf. "Measurements and structure") chief of which are: *A. palustris* 2nd primary longer, 4th and 5th shorter, 3rd only emarginated not 4th or 5th, 2nd only with notch on inner web and this is much nearer tip of feather.

FIELD-CHARACTERS.—Bears close resemblance to Reed-Warbler and is often found in similar localities, but has a different carriage. Pale flesh-coloured tarsus of Marsh-Warbler is much lighter than slate-brown of Reed, and upper-parts are a colder more olive brown. By far the best field-character, however, is striking and melodious song of male, which differs widely from the well-known jerky song of Reed-Warbler, being infinitely superior, taken in quick time and including imitations of many other species (F.C.R.J.).

BREEDING-HABITS.—Haunts osier-beds and banks of streams, but also tangled hedge-bottoms, edges of cornfields, etc., not necessarily near water. *Nest.*—Shallower and more Warbler-like than that of Reed-Warbler, and fixed by "basket-handles" to supporting vegetation; built dry grasses, lined roots and few hairs, and fastened to willow herb or other plants at about 2 to 4 ft. above ground. *Eggs.*—4 or 5, very rarely 6; ground bluish or greenish-white, rather scantily and boldly spotted and blotched with olive-brown and ashy shell-marks, as well as fine blackish specks. Average of 22 British eggs, 18.9×14.1 mm. *Breeding-season.*—About second or third week of June in England. Single-brooded.

FOOD.—Marsh-haunting insects and their larvæ: diptera, neuroptera, lepidoptera, coleoptera, etc. Also aphides and spiders. According to Naumann berries are also taken (currant, elder, bird-cherry and dogwood).

DISTRIBUTION.—*England.*—Summer-resident arriving late May or early June. Apparently scarce and local, but distribution still not well known. Has been recorded as nesting in: Somerset, several districts regularly; Dorset, 1897, (?) 1908, 1917 (probably), 1919; Wilts., once, 1900; Hants., 1907 and twice previously; Sussex, twice, 1903, 1917; Kent, twice, 1905 and 1909; Surrey, once, 1907; Gloucester, frequently; Oxon., annually for several years; Bucks., once, 1909; Berks., twice, 1918; Hunts., once, 1917; Cambs., 1909 and once previously; Norfolk, possibly once about 1880; Staffs., 1914, 1916, 1918; Warwick, 30 or 40 years ago and 1917; Worcester, in some numbers. *Scotland.*—Vagrant, one St. Kilda (O. Hebrides), Sept. 1910; Fair Isle (Shetlands) one, Sept. 1906, one June 1913, one June 1914.

DISTRIBUTION.—*Abroad.*—Europe from Denmark and Russian Baltic Provinces to south Spain (?), Italy, Montenegro, and Bulgaria, east to Ural (Orenburg) and Caspian Sea. Winters in Africa, south to Natal and Pondoland.

ACROCEPHALUS DUMETORUM

145. *Acrocephalus dumetorum* Blyth—BLYTH'S REED-WARBLER.

ACROCEPHALUS DUMETORUM Blyth, Journ. As. Soc. Bengal, xviii, p. 815 (1849—New name for the *Sylvia montana* or *Acrocephalus montanus* of Indian authors, which had been erroneously identified with Horsfield's *Sylvia montana*—India).

Acrocephalus dumetorum Blyth, W. E. Clarke, Ann. Scot. Nat. Hist., 1911, p. 70.

DESCRIPTION.—*Adult male and female.* *Winter.*—Coloration like *A. palustris* and very difficult to distinguish but usually rather

darker, more earthy-brown and less olivaceous on upper-parts, but often no distinguishable difference. (Some undoubted adults are inclined to be rich brown with a rufous tinge as in adult Reed-Warbler but are usually somewhat darker.) Under-parts intermediate between *A. scirpaceus* and *A. palustris*; edges and tips of wing-feathers not so pale as in *A. palustris*. This plumage is acquired by complete moult July-Nov. *Summer*.—The body-feathers, usually lesser and median wing-coverts and occasionally some greater wing-coverts and the innermost secondary are moulted Feb.-April. New plumage of upper-parts more olivaceous earth-brown, not such a rich brown, as in winter. When worn becomes paler earth-brown, but is always darker than Marsh-Warbler and without rusty-tinge of Reed-Warbler.

Nestling.—(Not examined.)

Juvenile.—Upper- and under-parts much like adult winter Reed-Warbler; fringes of wing- and tail-feathers and upper tail-coverts especially of a decided rusty tinge. Not so rufous as juvenile or first winter Reed-Warbler.

First winter.—As adult but rusty fringes of wing- and tail-feathers distinguish it. The juvenile body-feathers, lesser, median and greater wing-coverts and innermost secondaries are moulted Aug.-Sept., but not rest of wings or tail.

Measurements and structure.—♂ wing 61-65 mm., tail 49-55, tarsus 20-24, bill from skull 15-16.5 (12 measured). ♀ wing 59-64. Primaries: 1st equal to, or 1-2 mm. shorter or 1-3 longer than, primary-coverts, 3rd and 4th longest (4th very rarely 1 mm. shorter), 2nd 3-5 shorter (sometimes equal to 5th, usually between 5th and 7th, occasionally equal to 7th) 5th 1.5-2 shorter (occasionally equal to 3rd), 6th 2-5.5 shorter; 3rd and 4th emarginated outer webs, 5th sometimes also emarginated; 2nd with a notch on inner web falling short of tips of secondaries, 3rd usually with a less distinct notch falling between tips of 8th primary and secondaries. Outer tail-feathers 4-9 mm. shorter than central. Tips of tail-feathers inclined to be pointed. Bill rather wider at base than either *A. s. scirpaceus* or *A. palustris*, tip compressed and thin. Otherwise structure as *A. a. arundinaceus*.

Soft parts.—Bill: upper-mandible dark brown, lower-mandible flesh; legs and feet brownish-flesh; iris pale brown.

CHARACTERS.—No subspecies. Upper-parts usually darker and more earth-brown and not so rusty as in *A. s. scirpaceus* nor so olivaceous as *A. palustris*, differing from both in details of wing-formula and emargination of primaries.

BREEDING-HABITS.—Accounts rather contradictory: in India said to build domed nest of grasses in thick bushes, but in Russia described as building nest much like Marsh-Warbler's, but lined hair. *Eggs*.—4-5, occasionally 6. Variable: some pink ground,

blotched or spotted pinkish-brown and grey; others, closely resembling Marsh-Warbler's; a third type has ground suffused brownish-grey with brown and ashy spots, etc. Average of 52 eggs, 17.6×13.7 mm. *Breeding-season*.—June.

FOOD.—Insects, but exact data not available.

DISTRIBUTION.—*Great Britain*.—Eight or nine. One Fair Isle (Shetlands), Sept. 29 and 30, 1910 (*ut supra*); one Spurn Point (Yorks.), Sept. 20, 1912 (J. K. Stanford, *Brit. B.*, vi, p. 217); one Holy Island (Northumberland), Sept. 25, 1912 (H. F. Witherby, *l.c.*, p. 206); four or five single birds Fair Isle, Sept. 24, 26, 29, 30 and Oct. 1, 1912 (Duchess of Bedford and W. E. Clarke, *Scot. Nat.*, 1913, p. 28); one Dudgeon Lt. ship (Norfolk), Oct. 20–21, 1912 (*Bull. B.O.C. Mig. Rep.* xxxiv, p. 271).

DISTRIBUTION.—*Abroad*.—Central Asia from Himalayas northward, to Transcaspia, Altai, Turkestan, west Siberia, and parts of European Russia. Winters in India, south to Ceylon and Burma.

ACROCEPHALUS SCHÆNOBÆNUS

146. *Acrocephalus schænobænus* (L.) — THE SEDGE-WARBLER.

MOTACILLA SCHÆNOBÆNUS Linnæus, *Syst. Nat.*, ed. x, i, p. 184 (1758—"Habitat in Europa." Restricted typical locality: S. Sweden).

Acrocephalus phragmitis, Seebohm, *Hist. Brit. B.*, i, p. 352; Saunders, p. 85.

Acrocephalus schænobænus (Linnæus), Yarrell, i, p. 376.



Moustached Warbler (*Luscinola m. melanopogon*). B. Sedge-Warbler (*Acrocephalus schænobænus*). C. Aquatic Warbler (*A. aquaticus*). From above.

DESCRIPTION.—*Adult male and female. Winter*.—Whole crown with broad brown-black streaks each feather edged with brown; back of neck, mantle and scapulars more uniform brown with much fewer, smaller and less dark streaks; back, rump and upper tail coverts tawny (varying in shade) and uniform save for occasional

dark shaft-lines ; broad and distinct stripe from nostrils, over and behind eye pale cream-colour ; centre of lores dusky ; ear-coverts yellowish-brown ; chin, centre of throat and centre of breast and belly white or whitish-cream, breast and sides of throat and under tail-coverts pale buff to tawny-buff ; exceptionally with a few dusky spots on sides and base of throat and upper-breast ; flanks darker and more tawny ; axillaries and under wing-coverts white or whitish-cream with dusky centres ; tail-feathers dark brown narrowly edged pale brown ; wing-feathers blackish-brown narrowly edged on inner webs whitish and outer webs pale brown, tips whitish-brown, innermost secondaries broadly edged pale brown ; primary-coverts blackish-brown with very narrow edges and tips of pale brown ; rest of wing-coverts same but with broad edges and tips. This plumage is acquired by complete moult July-Aug. *Summer*.—A complete moult (including wings and tail) takes place Jan.-April. New plumage as winter but dark streaks on mantle rather less prominent and never with spots at base of throat or on upper-breast but occasionally with a few spots on sides of throat.

Nestling.—Down absent. Mouth, inside orange-yellow, two black oblong spots situated laterally on tongue-spurs, externally flanges pale yellow.

Juvenile.—Resembling adult but edgings of feathers of upper-parts paler and more yellowish-brown especially noticeable on crown ; back, rump and upper tail-coverts more yellowish, less tawny ; sides and base of throat and upper-breast more or less spotted, feathers having small dusky-brown tips ; sides, flanks and under tail-coverts usually less tawny than adult, but this varies in shade.

First winter.—Somewhat intermediate between juvenile and adult. Dark streaks on mantle more prominent than in juvenile or adult ; brown of upper-parts not usually quite so pale and yellowish as in juvenile but distinctly more yellowish than in adult ; base of throat and upper-breast usually spotted as in juvenile but occasionally without spots ; under-parts (allowing for variation) usually paler than in adult. The juvenile body-plumage is moulted July-Sept., but apparently not wing-coverts and not wing- or tail-feathers. *Summer*.—Moult as in adult after which resembles adult.

Measurements and structure.—♂ wing 63-71 mm., tail 47-55, tarsus 21-22.5, bill from skull 13-15 (12 measured). ♀ wing 63-70. Primaries : 1st minute, 1-7 mm. shorter than longest primary-covert, 3rd longest, 2nd 1-2 shorter or equal to 3rd, 4th 1-4 shorter, 5th 4-6 shorter, 6th 7-8 shorter ; 3rd emarginated on outer web ; 2nd with a notch on inner web falling between tips of 7th and 9th primaries. Tail rounded, 12 feathers, central pair longest, rest graduated, outermost being 4-8 mm. shorter than central, tips of feathers inclined to be pointed. Under tail-coverts about three-fourths as long as outer tail-feathers. Bill rather finer than in

Reed-Warbler and not so broad at base. Nostrils mostly bare. Rictal bristles finer and weaker.

Soft parts.—Bill black-brown with base of lower mandible yellowish-flesh ; gape orange ; legs and feet pale dun-grey ; iris brown.

CHARACTERS.—No subspecies. For differences of *A. aquaticus* see that species. Black streaked crown and mantle distinguishes it from other British *Acrocephali* and small 1st primary from *Luscinola melanopogon*.

FIELD-CHARACTERS.—More catholic than Reed-Warbler in its habitat, is often found in hedgerows and tangled vegetation at some distance from water, though its main haunts are osier-beds and thickets by waterside. Less skulking in behaviour than Reed-Warbler and readily distinguished from that species and Marsh-Warbler by its variegated head and back and distinct eye-stripe. As loquacious as its congeners, sings by night and day, but song wants the mellow quality of the Marsh-Warbler's, although equally imitative, and has harsh notes that the Reed-Warbler's lacks. Alarm-note a low croak.

BREEDING-HABITS.—Nests in rank vegetation ; osier-beds, etc., but also in hedgerows and bushes at a distance from water. *Nest*.—Generally within a foot or two of the ground, but exceptionally 4 or 5 ft. and even 10 ft. above it. Rather bulky, but not so deep or cylindrical as Reed-Warbler, moss and dead grasses as foundation and built of stalks and grass, generally lined hair, occasionally a few feathers. *Eggs*.—5-6, rarely 7, not unlike Yellow Wagtail's, being so thickly speckled with ochreous that ground is often hidden, generally a dark hair-streak. A pink type has occasionally been recorded and white eggs or almost white with few markings occur exceptionally. Average of 100 eggs, 17.7×13.4 mm. *Breeding-season*.—About May 20-June 10. Second brood sometimes reared. *Incubation*.—Period in incubator, hatched on 15th day (W. Evans). *Fledging-period*.—10 days (Howard) ; 13-14 days (Brock).

FOOD.—Insects and their larvæ : diptera, neuroptera, small coleoptera. Also aphides, spiders, and according to Saunders small slugs and worms ; Saxby also mentions small worms and Naumann elderberries.

DISTRIBUTION.—*England, Wales, and Ireland*.—Summer-resident. Generally distributed. Occasionally occurs in Oct. (probably on passage) and exceptionally in winter. *Scotland*.—Generally distributed but rarer in north, and very rare north-west ; scarce Orkneys ; only once Shetland, but regular migrant spring, rare autumn, Fair Isle ; scarce breeder in some I. Hebrides, but absent from others ; very rare vagrant O. Hebrides (Barra).

MIGRATIONS.—*British Isles.*—Early arrivals of summer-residents second week April (early date 2nd), main arrival begins last week April (first week May in some years) and becomes merged in movements of passage-migrants, that last from first week May to first week June and take place by both east and west coast routes (Scillies to Solway and Channel to Forth) and northern isles. Departure of summer-residents begins end July (early date Channel Islands Lt. 16th), heaviest period latter half Aug. and first half Sept. Becomes merged into movements of passage-migrants that begin first week Aug. and last to end Sept. both east and west coast routes (as spring) being used. (Late dates St. Catherine's Lt. (Isle of Wight), Oct. 2; Eddystone Lt. (Cornwall), Oct. 3; Skerries Lt. (Anglesey), Oct. 6.)

DISTRIBUTION.—*Abroad.*—From about lat. 70° north in Sweden, the Murman Coast and Archangel, Ob and Yenisei throughout western Siberia and Altai Mountains, Russia and Europe, but rare or absent from Spain and Greece, wintering in Asia Minor and Africa. Accidental Madeira.

ACROCEPHALUS AQUATICUS

147. *Acrocephalus aquaticus* (Gm.) — THE AQUATIC WARBLER.

MOTACILLA AQUATICA Gmelin, Syst. Nat., i, ii, p. 953 (1789—No locality given. Ex Scopoli, who described birds from Carniola or Venetia).

Acrocephalus aquaticus (J. F. Gmelin), Yarrell, i, p. 380; Saunders, p. 87.

DESCRIPTION.—*Adult male and female.* *Winter.*—Broad line down centre of crown pale yellow-buff, fore-head tawny-buff, sides of crown brown-black feathers narrowly edged buff; nape buff narrowly streaked brown to brown-black; mantle and scapulars more tawny-buff or pale tawny-brown and with broader and very prominent brown-black streaks; rump same but with narrower streaks; upper tail-coverts tawny-brown with dark brown shaft-streaks; broad and distinct stripe from nostrils over and behind eye pale yellow-buff; lores creamy-white; ear-coverts pale yellow-brown streaked brown-black on upper portion; chin and centre of belly white to yellowish-white; sides of throat, breast, flanks and under tail-coverts pale yellow-buff to pale tawny-buff with varying number of very narrow dark brown streaks on base of throat, breast and flanks (but often these streaks are absent); under tail-coverts sometimes with brown shaft-streaks; axillaries and under wing-coverts white with dusky centres; tail-feathers: most of outer webs and edges of inner webs pale brown or tawny-brown, centres dark brown; wing-feathers dark brown narrowly edged on inner webs whitish and on outer webs pale brown, tips whitish-brown, innermost secondaries black-brown broadly edged and tipped yellowish or tawny-buff to pale tawny-brown; primary-

coverts black-brown with very narrow edges and tips of pale brown ; greater and median coverts as innermost secondaries ; lesser wing-coverts greyish-brown. This plumage is acquired by complete moult in late June to Sept. *Summer*.—The body-feathers are moulted in April but apparently not wing- or tail-feathers nor wing-coverts. Plumage much as winter but centre of crown and pale portions of mantle and scapulars more greyish less yellowish ; under-parts paler buff or cream and brown-black streaks on breast and flanks much more prominent and more numerous and apparently never absent. In much worn plumage the upper-parts become less tawny, more greyish-brown, with heavy dark streaks, and under-parts become white with dark streaks on upper-breast and flanks very prominent.

Nestling.—(Not examined.)

Juvenile.—Like adult winter, but edges of feathers of crown and mantle more whitish not so yellowish, and black streaks on mantle perhaps rather more prominent. Apparently without streaks on upper-breast.

First winter.—Like adult. The juvenile body-plumage is apparently moulted in autumn but no specimens in actual moult have been available.

Measurements and structure.—♂ wing 62-67 mm., tail 48-51, tarsus 19-22, bill from skull 12-13.5 (12 measured). ♀ wing 61-64. Primaries : 1st minute, 1-3 mm. shorter (very exceptionally 1-2 longer) than longest primary-covert, 3rd longest, 2nd equal to or 1 mm. shorter, 4th 1-3 shorter, 5th 3-6 shorter, 6th 6-9 shorter ; 3rd emarginated on outer web ; 2nd with a notch on inner web falling between tips of 6th to 9th primaries. Outer tail-feathers 8-10 mm. shorter than central. Tips of tail-feathers rather more pointed than in Sedge-Warbler. Other structure as Sedge-Warbler.

Soft parts.—Bill dark brown, basal part of lower mandible flesh ; legs and feet pale yellowish-flesh ; iris brown.

CHARACTERS.—No subspecies. Conspicuous pale line down centre of crown distinguishes it from Sedge-Warbler, also streaks on upper-parts always more prominent, ground-colour being paler, and rump is distinctly streaked, while tail-feathers are paler and in summer streaks on breast and flanks prominent.

BREEDING-HABITS.—Little reliable information : nests in marshes among clumps of sedge or willow bushes, not far from ground. *Nest*.—Said to be smaller and deeper than Sedge-Warbler's, built of grasses and bents, cobwebs and down, lined generally with horsehair, sometimes feathers. *Eggs*.—4 to 6, but little material available. Closely resemble Sedge-Warbler's, pale yellowish, closely freckled with brownish-yellow, sometimes a zone at big end and often a dark hair-streak. Average of 52 eggs, 17.1×13 mm. *Breeding-season*.—Said to be rather earlier than Sedge-Warbler's ; probably mid-May to June.

FOOD.—Chiefly insects: diptera, neuroptera, coleoptera (*Apion*, *Sitones*, *Phytonomus*, *Phytobius*, *Bagous*, *Lyprus*, *Galleruca*, *Donacia*, *Cyclonoton*) and orthoptera (*Forficula*). Jäckel also records small mollusca (*Planorbis*).

DISTRIBUTION.—*England*.—Twenty-one authentic examples obtained, and several others seen, chiefly Sept., but also Aug. and Oct., as follows: Cornwall (Eddystone), one; Hants., two; Isle of Wight, four; Sussex, seven and several seen; Kent, one and several seen; Norfolk, five and one seen; Leicester one. *Scotland*.—One Fair Isle (Shetlands) Oct. 23, 1914. *Ireland*.—One Bull Light (Cork) Sept. 20, 1903; one Tuskar Light (Wexford) Aug. 9, 1913.

DISTRIBUTION.—*Abroad*.—Central and south Europe (but absent from south of Balkan Peninsula), and north-west Africa. In south-east Europe and Egypt on migration; appears to occur in winter in north-west Africa, but winter-quarters not known for certain.

Genus HYPOLAIS Kaup.*

HYPOLAIS Kaup,† Skizz. Entw. & Nat. Syst. Eur. Thierw., p. 96 (1829—Monotype according to p. 191: "*S. hypolais*"; the diagnosis of the genus shows that the author by "*S. hypolais*" meant *Hypolais icterina*, not the bird probably named *S. hippolais* by Linnæus).

Structurally very close to *Acrocephalus*, but tail almost or quite square. Bill flattened and wide. Sexes alike, young like old. Nests open. Eggs pink or rosy lilac, spotted. Seven species in Palæarctic region, three have occurred in Great Britain. Migratory. Double moult.

Key to species of genus HYPOLAIS.

- | | | | |
|-----|--|---|-------------------------------|
| 1 { | Upperside greenish, underside yellow : . . . | 2 | |
| | Upperside brownish, underside whitish . . . | | <i>H. pallida</i> , p. 356 |
| 2 { | 1st primary stiffer, generally shorter than primary-coverts, 2nd longer than 5th . . . | | <i>H. icterina</i> , p. 352 |
| | 1st primary softer, longer than primary-coverts, 2nd shorter than 5th . . . | | <i>H. polyglotta</i> , p. 354 |

* *Phyllopseusta* Billberg, Syn. Faun. Scand., p. 53 (1828—Monotype "*P. hippolais* L.") should be the correct name, according to Mathews, *Austr. Avian Rec.*, II, p. 46. Billberg's name, however, cannot be accepted, as no diagnosis is given and Linné's *Motacilla hippolais* is not the Icterine Warbler!

† In the B.O.U. List of B.B., 1915, p. 78, the name *Hypolais* is attributed to Brehm; Brehm, 1828, however, wrote *Hippolais*, and his name is a "*nomen nudum*"; cf. Opinion 48, Intern. Comm. Nomencl.

HYPOLAIS ICTERINA

148. *Hypolais icterina* (Vieill.)—THE ICTERINE WARBLER.

SYLVIA ICTERINA Vieillot, Nouv. Dict. d'Hist. Nat., nouv. éd., XI, p. 194 (1817—France).

Hypolais hypolais Seeböhm, Hist. Brit. B., I, p. 381; and others.

Hypolais icterina (Vieillot), Yarrell, I, p. 360; Saunders, p. 75.

DESCRIPTION.—*Adult male and female. Winter.*—

Whole upper-parts uniform brownish-olive; stripe from nostrils to eye and narrow ring round eye pale yellow; ear-coverts pale yellowish-brown; whole under-parts pale yellow; sides of breast and flanks slightly tinged brownish; axillaries and under wing-coverts very pale yellow; tail-feathers black-brown, outer pair very narrowly bordered whitish; rest fringed brownish-olive on outer webs; primaries and secondaries black-brown, tips and inner webs narrowly fringed whitish, outer webs very pale olive-brown; primary, greater and median coverts dark brown fringed and tipped as outer webs of secondaries; lesser coverts olive. This plumage is acquired by complete moult in July-Sept. *Summer.*—A complete moult (including wings and tail, in any case in some individuals) takes place in Feb.-Mar. New plumage as winter but upper-parts less brownish and more olive, and under-parts of a decidedly deeper yellow.

Nestling.—(Not examined.)

Juvenile.—Like adult but whole upper-parts brown with only a tinge of olive; tail- and wing-feathers and wing-coverts fringed brown; sides of breast and flanks browner than adult, rest of under-parts pale yellow as adult winter.

First winter.—Like adult but upper-parts and wing-coverts rather less olive and under-parts very pale yellow. The juvenile body-plumage, lesser and median wing-coverts and innermost secondaries are moulted in Aug.-Nov., but not rest of wings nor tail. *Summer.*—Like adults and moult apparently same but wings and tail probably always moulted.

Measurements and structure.—♂ wing 76-81 mm., tail 52-56, tarsus 18-21, bill from skull 12-15 (12 measured). ♀ wing 72-78. Primaries: 1st equal to or 1-2 mm. shorter or longer than longest primary-covert, 3rd longest, 4th occasionally as long but usually 1 mm. shorter, 5th 3-5 shorter, 6th 8-10 shorter, 2nd between 4th and 5th, occasionally equal to 4th; 3rd and 4th and sometimes 5th (but not so clearly) emarginated outer webs. Secondaries rather shorter than 10th primary, tips rounded. Tail fairly square, tips of feathers rounded. Bill broad and flat at base. A few rather stiff rictal and nasal bristles. Most of nostrils bare of feathers.



Icterine Warbler
(*Hypolais icterina*.)
Bill from above.

Soft parts.—Bill brown, lower mandible yellow (inside mouth bright orange) ; legs and feet lead-blue ; iris dark brown.

CHARACTERS.—No subspecies. 2nd primary being longer than 5th distinguishes it from *H. polyglotta*, the only other *Hypolais* with yellow under-parts.

FIELD-CHARACTERS.—The Icterine and Melodious Warblers attract attention at once by their peculiar songs and bright yellow colouring of under-parts, which at once distinguish them from all allied species on British List. Icterine is the larger, and male has an extraordinary song, uttered with great energy, generally while bird is in motion among the branches, lacking in melody, made up for by vehemence (F.C.R.J.).

BREEDING-HABITS.—Breeds in gardens, osier-beds, hedgerows, etc., placing neatly built nest in fork of bough, often of lilac, syringa or osier, from 4 to 8 ft. from ground as a rule. *Nest*.—Built of vegetable down, grasses, wool, etc., interwoven with bark-fibre or roots, decorated outside with birch-bark or bits of paper, and lined grass, roots and hair, sometimes feathers. *Eggs*.—4-5, rarely 6, ground dull rose or very pale pinkish-violet, sparingly spotted and streaked black. Average of 142 eggs, 18.3×13.4 mm. *Breeding-season*.—From end May or early June : mid-June in Scandinavia. *Incubation*.—13 days ; by both sexes.

FOOD.—Chiefly insects and their larvæ : coleoptera, diptera, lepidoptera (smaller moths), orthoptera (earwigs). Saunders says "principally insects and small snails," the latter presumably picked off plants. Ripe fruit (cherries and currants) freely eaten, also berries of elder and bird-cherry.

DISTRIBUTION.—*England*.—Fifteen obtained and others seen, mostly Sept., but one Aug., three June, two May and one April. Isle of Wight (St. Catherine's Light) one ; Sussex three ; Kent two obtained and two seen, and one seen Kentish Knock Lt.-v. ; Norfolk seven procured, two seen (all north coast) ; Yorks. one taken, another seen ; Northumberland one. *Scotland*.—Fair Isle (Shetlands), one June 1908, three June 1911, five Aug. 1912, one May 1913, one June 1914 ; Lerwick (Shetland) one May 1910 ; Pentland Skerries (Orkneys) two June 1914. *Ireland*.—One Dunsinea (Dublin), June 8, 1856 ; one Tuskar Rock (Wexford), Sept. 2, 1914.

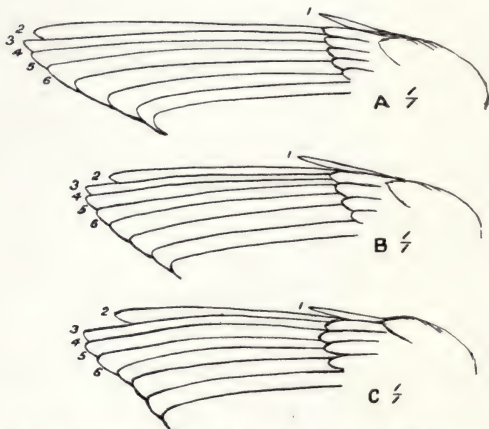
DISTRIBUTION.—*Abroad*.—Greater part of Europe (except extreme north, west France, Spain, and Greece), and perhaps north-west Africa (north Algeria) where however breeding not certain and probably only late migrant ; wintering in tropical Africa.

HYPOLAIS POLYGLOTTA

149. Hypolais polyglotta (Vieill.) — THE MELODIOUS WARBLER.

SYLVIA POLYGLOTTA Vieillot, Nouv. Dict., nouv. éd., xi, p. 200 (1817—France).

Hypolais polyglotta (Vieillot), Saunders, p. 77.



A. Icterine Warbler (*Hypolais icterina*). B. Melodious Warbler (*H. polyglotta*). C. Olivaceous Warbler (*H. p. elaeica*). Note difference in lengths of 1st and 2nd primaries.

DESCRIPTION.—*Adult male and female.*—So much like *H. icterina* in coloration as not to require separate description. Upper-parts usually browner and less olive and eye-stripe and under-parts usually of a deeper yellow. Moults as in *H. icterina* but in autumn from Aug.-Oct.

Nestling.—Not examined. Inside mouth orange, two dark spots at base of tongue (*H. Lynes*.)

Juvenile.—Very nearly resembling juvenile *H. icterina* but upper-parts usually a shade paler and more buffish-brown and under-parts perhaps rather more creamy.

First winter.—Upper-parts darker brown than *H. icterina*, under-parts pale creamy-yellow. The juvenile body-plumage is moulted in autumn but apparently not wing-coverts nor wing- and tail-feathers. *Summer.*—Moult apparently as in *H. icterina* after which becomes as adult.

Measurements and structure.—♂ wing 64-69 mm., tail 49-55, tarsus 19-22, bill from skull 12-14.5 (12 measured). ♀ wing 63-66. Primaries: 1st 2-8 mm. longer than longest primary-covert, 3rd and 4th longest, 5th occasionally as long, usually .5-2 mm. shorter, 6th 2-5 shorter, 2nd usually between 6th and 7th, occasionally between 5th and 6th or 7th and 8th; 3rd to 5th emarginated outer webs. Other structure as in *H. icterina*.

Soft parts.—Bill dark brown, lower mandible yellowish-flesh (inside mouth bright orange); legs and feet grey, tinged olive; iris dark brown.

CHARACTERS.—No subspecies. 2nd primary being shorter than 5th distinguishes it from *H. icterina*, besides other differences in wing-formula and shorter wing.

FIELD-CHARACTERS.—Lemon-yellow colouring of under-parts distinguish this species from all allies except Icterine. Melodious Warbler is rather smaller, slightly darker on crown and wings, and has a different song, less vehement and persistent (F.C.R.J.).

BREEDING-HABITS.—Breeds usually in bushes by side of streams, but occasionally in scrub on hillsides. *Nest.*—Neatly built of vegetable down and grasses, lined with down, roots, hair and occasionally feathers, placed in fork of bush about 3 to 5 ft. from ground. *Eggs.*—Normally 4, sometimes only 3, and occasionally 5. Ground-colour dull rose with violet tinge, varying in depth, and black spots and streaks. Average of 100 eggs, 17.7×13.2 mm. *Breeding-season.*—Latter half May onwards in south Europe. Apparently two broods, second late June.

FOOD.—Chiefly insects and their larvæ: few definite data available, Diptera freely taken; Lynes found hymenoptera (ants), and J. H. Stenhouse flies, small beetles and grasshoppers in stomach.

DISTRIBUTION.—*England.*—Only three obtained. Male, Burwash (Sussex), April 30, 1897 (N. F. Ticehurst, *Zool.*, 1897, p. 333). Male, Ninfield (Sussex), May 10, 1900 (W. R. Butterfield, *Ibis*, 1900, p. 569). Male near Sandplace, Looe (Cornwall), May 12, 1905 (J. Clark, *Zool.*, 1907, p. 282). This, or the Icterine, several times reported as seen and heard singing, notably in Pembroke in summer 1886, and in south-east Devon near Lyme Regis in May, 1897, and in some numbers in May, 1898, when they were said to be nesting. Eggs, apparently of this, but possibly of preceding species, were taken at Lancing (Sussex) about 1893, and near Croydon (Surrey) in 1884. *Scotland.*—Female, Isle of May (Forth), Sept. 27, 1913 (E. V. Baxter and L. J. Rintoul, *Scot. Nat.*, 1913, p. 273). *Ireland.*—One, Old Head Light, Kinsale (Cork), Sept. 23, 1905 (R. M. Barrington, *Irish Nat.*, 1906, p. 157). One said to have been seen and heard singing at Coollatin (Wicklow), May, 1886.

DISTRIBUTION.—*Abroad.*—France, with exception of northernmost departments (north of Somme), south-west Europe and north-west Africa, Italy. Rare visitor to Belgium, Heligoland, Bohemia and Moravia. Accidental Madeira. Winters in west Africa.

HYPOLAIS PALLIDA

150. *Hypolais pallida elæica* (Linderm.)—THE OLIVACEOUS WARBLER.

SALICARIA ELÆICA Lindermayer, Isis, 1843, pp. 342, 343 (Greece).
*Hypolais p. pallida** T. Parkin, Brit. B., ix, p. 198.

DESCRIPTION.—*Adult male and female.* *Winter.*—Whole upper-parts uniform pale greyish-brown with an olivaceous tinge; narrow stripe from base of bill and over eye creamy-white; ear-coverts and sides of neck very pale brown; whole under-parts including axillaries and under tail-coverts creamy-white, sides of breast and flanks tinged very pale brown; tail-feathers dark brown, inner webs very narrowly margined creamy-white and outer webs of outermost pair pale dusky sometimes whitish; primaries and secondaries dark brown with inner webs narrowly fringed white and outer webs fringed pale brown; all wing-coverts dark brown fringed and tipped pale brown as rest of upper-parts. This plumage is acquired by complete moult in July–Oct. *Summer.*—A complete moult (including wings and tail) takes place Jan.–March. New plumage as winter.

Nestling.—(Not examined.)

Juvenile.—Like adult and only distinguishable by looser structure of feathers.

First winter.—Like adult. The juvenile body-plumage, median and lesser wing-coverts and innermost secondaries are moulted July–Oct. but not rest of wings or tail.

Measurements and structure.—♂ wing 64–68 mm., tail 50–55, tarsus 20–23, bill from skull 12.5–14, width at base 4.75–6 (12 measured). ♀ wing 63–65. Primaries: 1st 3–7 mm. longer than longest primary-covert, 3rd and 4th about equal and longest, 5th sometimes equal but usually 1–2 mm. shorter, 6th 2–5 shorter, 7th 5–8 shorter, 2nd somewhat variable usually equal to 6th, sometimes between 5th and 6th or 6th and 7th, occasionally between 7th and 8th; 3rd to 5th emarginated on outer webs. Secondaries rather shorter than 10th primary, tips rounded.

* The example recorded by Mr. T. Parkin has been examined by me (by courtesy of the owner, Mr. J. B. Nichols) and I find it to belong to the more greyish northern form and not to the typical Egyptian form. I have also compared the specimens collected by Lindermayer which are in the Brehm collection at Tring.—E.H.

Tail fairly square, tips of feathers rounded. Bill broad and flat at base, somewhat pronounced ridge to culmen. A few rather stiff rictal and nasal bristles. Most of nostrils bare of feathers.

Soft parts.—Bill dark brown, lower mandible flesh; legs and feet grey-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*H. p. pallida* (Nile Valley) is of a warmer tone of brown on upper-parts, *H. p. opaca* (Spain, north-west Africa) has considerably larger bill and is usually slightly more tinged with olive on upper-parts, *H. p. reiseri* (southern Tunisia and southern Algeria) has smaller bill and is considerably paler on upper-parts. *H. rama* is much like *H. p. elæica* but has longer 1st primary and 2nd primary is shorter than 7th.

FIELD-CHARACTERS.—Its uniform pale brown upper-parts and wide bill are diagnostic. It is restless but not shy and is fairly easily observed and is rather partial to gardens and orchards. Its song is soft and pleasing though rather rambling (H.F.W.).

BREEDING-HABITS.—Breeds generally in bushes and scrub about 3 ft. from ground, also in gardens and trees occasionally as high as 10 ft. *Nest*.—Neatly built of vegetable down and fibres or roots and grasses. *Eggs*.—Very often 3, sometimes 4, dull greyish-white ground as a rule, with black streaks and spots. Average of 105 eggs, 17.4×13.3 mm. *Breeding-season*.—Latter part May and June.

FOOD.—Probably entirely aphides and other insects from leaves of trees and bushes, but exact data lacking.

DISTRIBUTION.—*England*.—One. Male, near St. Leonards-on-Sea (Sussex), May 20th, 1915 (*ut supra*).

DISTRIBUTION.—*Abroad*.—Breeds in Balkan Peninsula from Dalmatia, Montenegro, and Bulgaria southwards; also in Greek Islands, Asia Minor, Cyprus, Crete, Palestine, Mesopotamia, Transcaucasia, Turkestan, Persia and Transcaspia. Winters in Baluchistan, southern Arabia, east Africa to Albert Nyanza. Replaced by other forms in Nile Valley and eastern Sudan, Spain and north-west Africa and in oases of western Sahara.

Genus SYLVIA Scopoli.

SYLVIA Scopoli, Annus I. Histor.—Nat., p. 154 (1768—Type by subsequent designation, Gray, 1840; *S. melanocephala*)

Bill not compressed, culmen more or less curved, rictal bristles less developed than in *Acrocephalus* and *Hypolais*. 1st primary and shape of tail very variable. It is, however, not wise to split *Sylvia* up into two or three genera, as several species connect such

supposed genera, and we should then have to make six groups, as was done by Kaup. Sexes sometimes alike, more often different. Nests open, eggs spotted. Numerous species in Palæarctic region, northern forms migratory.

Key to species of genus SYLVIA.

- | | | |
|-----|---|--|
| 1 { | 1st primary a little shorter than or equal to primary-coverts, both webs of outer tail-feathers almost entirely white | <i>S. rappelli</i> , p. 375 |
| | 1st primary much shorter than primary-coverts, little if any white on outer tail-feathers 2 | |
| | 1st primary distinctly longer than primary-coverts, inner web of outer tail-feathers, if at all, not more than half white 4 | |
| 2 { | Secondaries with rufous edges. | <i>S. communis</i> , p. 369 |
| | Secondaries without rufous edges 3 | |
| 3 { | Outer tail-feathers with some white, tail over 66 mm. | <i>S. nisoria</i> , p. 359 |
| | Outer tail-feathers without any white, tail under 66 mm. | <i>S. borin</i> , p. 364 |
| 4 { | Tail longer than wing, outer tail-feather more than 1 cm. shorter than middle | <i>S. undata</i> , p. 383 |
| | Tail not longer than wing, outer tail-feather not more and mostly much less than 1 cm. shorter than middle 5 | |
| 5 { | Wing 79 mm. or more, crown dull black or grey | <i>S. hortensis</i> , p. 361 |
| | Wing under 79 but over 70, crown glossy black | <i>S. atricapilla</i> , ♂ ad., p. 366 |
| | Wing under 79, but over 60, crown rufous | <i>S. atricapilla</i> , ♀, p. 367 |
| | Wing under 70, crown glossy black | <i>S. melanocephala</i> , ♂ ad., p. 377 |
| | Wing under 70, crown grey or brown 6 | |
| 6 { | Tail blackish, back dark brown | <i>S. melanocephala</i> , ♀, p. 378 |
| | Tail brown, upper-parts dark grey or paler brown 7 | |
| 7 { | Throat rufous, upper-parts ashy | <i>S. cantillans</i> , ♂ ad., p. 380 |
| | Throat not rufous, upper-parts pale brownish 8 | |
| 8 { | Throat white | <i>S. curruca</i> , p. 372 |
| | Throat buff | <i>S. cantillans</i> , ♀ and juv., pp. 380-1 |

SYLVIA NISORIA

151. *Sylvia nisoria nisoria* (Bechst.) — THE BARRED WARBLER.

MOTACILLA NISORIA Bechstein, Gem. Naturg. Deutschl., iv, p. 580 (1795—Middle and N. Germany).

Sylvia nisoria (Bechstein), Yarrell, III, p. ix ; Saunders, p. 51.

DESCRIPTION (Plate 12).—*Adult male. Winter.*—Whole upper-parts greyish-brown, feathers of fore-head and crown with not very conspicuous pale buff or greyish-white tips ; feathers of mantle and scapulars rather browner and with only faint indications of buffish tips ; rump paler and feathers with more distinct greyish-white tips with faint dark penultimate line ; upper tail-coverts same but greyer not so brown and tips rather whiter ; lores greyish-white ; ear-coverts pale brown ; chin, throat, breast and belly white ; feathers of sides of throat, breast and sides and upper flanks with dark grey crescentic bars ; lower flanks and under tail-coverts darker, feathers being buffish-brown with whitish tips and dark brown penultimate bars ; axillaries buffish-white with brown bars ; tail brown-grey with narrow white tips and narrow white margin to inner webs, outer pair with outer edge of outer web and most of inner web towards the tip white, next two pairs without white on outer web, but with more white on tip than the rest ; primaries and secondaries dark grey-brown with very narrow greyish-white edges to outer webs, wider and whiter edges to inner webs and tips white, innermost secondaries with buffish-white or pale buff tips and fringes ; primary-coverts as primaries ; greater coverts as innermost secondaries ; median coverts same but with rather whiter tips with inconspicuous dark penultimate bars ; lesser coverts greyer and with much smaller whitish tips. This plumage is acquired by complete moult July-Aug. *Summer.*—A moult which varies much individually in extent takes place in April and probably often earlier. The body-feathers are mostly renewed and a varying number of tail-feathers, inner secondaries and lesser, median and greater wing-coverts but not primary-coverts or primaries. New feathers of upper-parts and wing-coverts greyer than winter and with white or whitish tips with blackish penultimate bars ; except for centre of breast and belly whole under-parts become barred with crescentic bands of dark grey-brown ; new tail-feathers are greyer and have more white at tips, while two outer pairs usually have considerably more white on inner webs than in winter, but amount of white varies considerably individually, as does the barring on upper- and under-parts and the shade of grey of upper-parts.

Adult female. Winter.—Like adult male winter, but upper-parts browner, pale tips of feathers less whitish and less noticeable ; under-parts with barring only on sides of breast and flanks, and these are paler and less strongly barred ; axillaries without bars ;

under tail-coverts much as in male ; tail-feathers browner, with the white much duller and less in extent ; wing-feathers and wing-coverts browner with tips and edgings very pale brown or whitish-brown. Molt as in male. *Summer*.—Molt as in male, after which much like adult winter male, being browner and considerably less barred than summer male and usually with less white in tail.

Nestling.—(Not examined.)

Juvenile.—Whole upper-parts brown, feathers with greyish bases and rusty tips, with no greyish tips even on upper tail-coverts ; lores pale buff ; ear-coverts pale buffish-brown ; chin, throat and belly buffish-white ; breast buff ; flanks and under tail-coverts pale greyish-brown, feathers tipped buff ; tail- and wing-feathers as adult winter female ; greater coverts brown with buff edgings and tips ; median and lesser coverts uniform brown.

First winter. Male and female.—Like adult winter female but males are perhaps slightly greyer on upper-parts, wings and tail, and females usually have no trace of barring on sides of breast and flanks. The juvenile body-feathers, lesser and median wing-coverts and some inner greater coverts are moulted in July, but not primary-coverts or wing- and tail-feathers. *Summer*.—Molt as in adult, after which there seems no certain distinction.

Measurements and structure.—♂ wing 85-91 mm., tail 68-74, tarsus 23-26, bill from skull 14-17 (12 measured.) ♀ wing 84-90. Primaries : 1st one-third to half as long as primary-coverts, 3rd longest, 2nd occasionally as long but usually as 4th .5-1 mm. shorter, 5th 3-5 shorter, 6th 6-8 shorter ; 3rd and 4th distinctly and 5th very slightly, emarginated outer webs. Secondaries equal to or rather shorter than 10th primary, tips rather square. Tail square except that outermost pair are 4-5 mm. shorter, 12 feathers, tips rounded. Bill fairly strong, culmen slightly curved at tip. A good many rectal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill dark horn, base of lower mandible brownish-flesh ; legs and feet brownish-grey ; iris pale brownish-yellow.

CHARACTERS AND ALLIED FORMS.—*S. n. merzbacheri* (west Siberia, Turkestan) is, in the adult summer male, rather paler grey on upper-parts but is often difficult to distinguish. In some plumages might be confused with Orphean Warbler, but longer tail and different wing-formula and whitish tips to upper tail-coverts (except in juvenile) distinguish it.

FIELD-CHARACTERS.—Distinguished by its large size and pale coloration and comparatively long tail. Slight barring of young bird in autumn is not noticeable in the field. Rather skulking in habits (H.F.W.).

BREEDING-HABITS.—Nests in hedges, low bushes or scrub as a rule within a few feet of ground and only exceptionally at a height above it. *Nest*.—Built of bents and grasses, lined horsehair and fine

roots. *Eggs*.—Normally 5, occasionally 6 or only 4, and very characteristic, being as a rule faintly speckled or clouded with pale leaden-brownish or greyish shell-markings on a milky or greyish-white ground. Hartert records one clutch with bold red-brown spots and blotches. Average of 100 eggs, 21×14 mm. *Breeding-season*.—Usually latter half May and early June. *Incubation*.—14 days : male relieving hen in mid-day (Bau). Single brooded.

Food.—Chiefly insects : coleoptera (*Carabus*, *Lema*, *Phyllopertha*, *Elater*, etc.), diptera, orthoptera, and larvæ of lepidoptera. Also occasionally worms and berries (currant, cherry, elder, bird-cherry, etc.).

DISTRIBUTION.—*British Isles*.—Probably annual autumn passage-migrant in small numbers east coast, northern isles and Channel, without doubt frequently overlooked but varying in numbers from year to year. Over forty England, about sixty Scotland, one Wales, and three Ireland. Most in northern isles and on east coast and in September, but also in August, October, and November, once in April and once in June. Sometimes in some numbers as in autumns 1912 and 1913. *England*.—Kent two; Suffolk one; Norfolk fifteen; Lincs. seven; Yorks. six; Northumberland nine; Cambs. one; Oxon. one; Lanes. one. *Wales*.—Skerries (Anglesey) one. *Scotland*.—Broadford (Skye) one; Dhuheartach Light (Argyll) one; St. Kilda one seen, Flannans two, Lewis one, Barra, one (Outer Hebrides); Tiree one (Inner Hebrides); Fair Isle about forty, Lerwick five (Shetlands); Auskerry two, Pentland Skerries one (Orkneys); Isle of May (Forth) six. *Ireland*.—Belmullet (Mayo) one; Rockabill Light (Dublin) two.

DISTRIBUTION.—*Abroad*.—Europe from south Sweden, Denmark, and Gulf of Finland, throughout Russia, locally in Germany (with exception of west, where rare visitor only, as it is in France), Austria and Hungary, to Rumania, Bulgaria, Montenegro, Dalmatia, and north Italy. Winters in north-east Africa. Replaced by very closely-allied form in west Siberia and Turkestan.

SYLVIA HORTENSIS*

152. *Sylvia hortensis hortensis* (Gm.)—THE ORPHEAN WARBLER.

MOTACILLA HORTENSIS Gmelin, Syst. Nat., i, ii, p. 955 (1789—France and Italy).

Sylvia orphea Temminck, Yarrell, i, p. 423; Saunders, p. 45.

* As explained by Hartert and others, Gmelin undoubtedly described the Orphean Warbler as *S. hortensis*, as a glance at his description shows. It is the oldest name, and must therefore be adopted.

DESCRIPTION (Plate 12).—*Adult male. Winter.*—Fore-head and crown dull greyish-black to brownish-black ; rest of upper-parts including upper tail-coverts uniform grey-brown ; lores and ear-coverts rather darker than crown ; feathers above lores edged with whitish ; chin, centre of upper-throat and centre of belly pure white ; breast and rest of throat and belly white, more or less tinged with buffish-pink ; flanks and under tail-coverts darker pinkish-buff ; axillaries pinkish-buff ; under wing-coverts whiter with brown bases ; tail-feathers greyish-black to brownish-black narrowly fringed greyish-white, all except central pair with small white tips, penultimate pair with large white tips and outer pair white with only the shaft and inner portion of inner web brown-black ; wing-feathers greyish-black edged whitish on inner webs and narrowly edged greyish-white on outer webs, tips greyish-white ; innermost secondaries and wing-coverts dark brown with greyish-brown tips and edges. This plumage is acquired by complete moult July-Sept. *Summer.*—A complete moult (including wings and tail) takes place from Feb. to May. New plumage as winter, but crown usually rather darker. In much worn plumage buff of breast and flanks becomes paler and loses much of its pink hue.

Adult female. Winter and summer.—Like adult male but fore-head and crown not so dark ; in winter usually dark brownish-grey not blackish, but in summer often blackish though not so dark as adult summer male (N.B.—Variation in darkness of crown seems to be individual and not connected with age) ; rest of upper-parts browner not so greyish as in male ; wing- and tail-feathers browner ; buff of under-parts usually more brownish and less pinkish.

Nestling.—(Not examined.)

Juvenile.—Whole upper-parts including crown as well as wing-coverts and innermost secondaries of a uniform brown, darker and browner even than in adult female ; under-parts as adult female, but buff of flanks and under tail-coverts a shade paler.

First winter. Male and female.—Like adult winter female but crown browner and almost uniform with rest of upper-parts. The juvenile body-plumage, wing-coverts and innermost secondaries are moulted June-Aug., but not primary-coverts or rest of wing-feathers or tail. *First summer.*—Like adults, and moult the same.

Measurements and structure.—♂ wing 77-83 mm., tail 65-70, tarsus 22-24, bill from skull 15-17 (12 measured.) ♀ wing 73-80. Primaries : 1st 2-6 mm. longer than longest primary-covert, 4th longest, 3rd usually as long but sometimes like 5th 1 mm. shorter, 2nd and 6th usually equal to each other and 4-6 shorter ; 3rd to 5th emarginated outer webs. Secondaries rather shorter than 10th primary, tips rather square. Tail square, except that outermost pair are 2-3 mm. shorter, 12 feathers, tips sharply rounded. Bill strong, culmen slightly curved. A good many fine rictal and nasal bristles. Nostrils not covered with feathers.

Soft parts.—Bill slate-black with base of lower mandible grey ;

legs and feet slate-grey to greyish-brown; iris pale yellow to yellowish-white.

CHARACTERS AND ALLIED FORMS.—*S. h. crassirostris* (Balkans to Turkestan) has usually slightly longer bill and is considerably less buff on under-parts especially flanks and under tail-coverts which are inclined to be grey. White in tail distinguishes it from Blackcap. In some plumages might be confused with Barred Warbler, but uniform upper tail-coverts, shorter tail and wing-formula always distinguish it.

FIELD-CHARACTERS.—Like a large Blackcap without the definite "cap," with a white throat and white in outer tail-feathers. The "tut-tut" alarm-note is much like that of Blackcap and so is its song, which, however, is more varied and less resonant (H.F.W.).

BREEDING-HABITS.—Usually nests among outer branches of trees, 5 to 8 ft. from ground, but occasionally in quite small bushes or at considerable heights in trees. *Nest.*—Neatly built of grasses, roots and bents, mixed into a few flowery weeds and down, lined finer roots, and at times a little hair. *Eggs.*—4 or 5, ground pale greenish-white, with umber-brown spots and streaks and ashy shell-marks. The spots frequently have soft brownish edges. Average of 100 eggs, 20×14 mm. *Breeding-season.*—From early May onward in south Europe: late April in north Africa. *Incubation.*—Male takes part (Stenhouse).

FOOD.—Insects and their larvæ found in trees, especially lepidoptera (moths and caterpillars), diptera, etc., but little definite information. Berries said to be eaten in autumn, and J. H. Stenhouse found grasshoppers and figs in stomach.

DISTRIBUTION.—*England.* — Five obtained. Female shot and another said to have been seen near Wetherby (Yorks.), July 6, 1848 (thought to have been nesting). Young bird, said to have been unable to fly, caught near Holloway (Middlesex), June, 1866 (Saunders, p. 45). Female shot near St. Leonards (Sussex), Oct. 7, 1903 (W. R. Butterfield, *Bull. B.O.C.*, xiv, p. 16). Young bird picked up near same place Sept. 16, 1905 (C. B. Ticehurst, *op. c.*, xvi, p. 35). Male shot West St. Leonards, Sept. 21, 1916 (J. B. Nichols, *Brit. B.*, xi, p. 45).

DISTRIBUTION. — *Abroad.* — South-west Europe and north-west Africa, through central parts of France in small numbers, north to Luxembourg and Metz, west Switzerland, Italy, and Sicily. Winter-quarters must be Africa, but not actually known. Replaced by a closely-allied form in Asia Minor, Turkestan, Afghanistan, Persia to Gilgit, west to Dalmatia, Herzegovina, Montenegro and Greece, wintering in India, Arabia, and north-east Africa.

SYLVIA BORIN*

153. *Sylvia borin* (Bodd.)—THE GARDEN-WARBLER.

MOTACILLA BORIN Boddaert, Tabl. Pl. Enl., p. 35 (1783—ex Daubenton, Pl. Enl. 579, 2—France).

Sylvia salicaria (Linnaeus), Yarrell, 1, p. 414; *Sylvia hortensis* nec Bechstein, Saunders, p. 49.

DESCRIPTION (Plate 12).—*Adult male and female.* *Winter.*—Whole upper-parts uniform brown tinged olive; upper tail-coverts with inconspicuous pale tips; lores and inconspicuous line over eye dull greyish-white; ear-coverts pale brown; chin and throat buffish-white; upper-breast and flanks darker brownish-buff; rest of breast and belly white; under tail-coverts pale brown with long white tips; axillaries bright buff to pale buff; under wing-coverts same with brown bases; tail-feathers olivaceous-brown with very narrow edgings of buffish-white on inner webs and greyish on outer webs; wing-feathers dark brown, tips and inner webs fringed whitish, outer webs fringed olivaceous-brown, innermost secondaries mostly olivaceous-brown with paler edgings; primary-coverts dark brown fringed paler brown; greater and median coverts olivaceous-brown with slightly paler brown tips and fringes; lesser coverts olivaceous-brown. This plumage is acquired by complete moult July-Sept. *Summer.*—A complete moult (including wings and tail) takes place Dec.-March and occasionally April. New plumage as winter, but upper-parts more earth-brown, not so olivaceous. In worn plumage, both in winter and summer, the upper-parts are greyer-brown, chin and throat whiter, breast paler.

Nestling.—Down absent. Mouth inside bright reddish-pink, a light purple, oval spot on each side of base of tongue; externally flanges yellow.

Juvenile.—As adults, but upper-parts more yellowish-brown, often with a rusty tinge; buff of breast and flanks darker than in adult and tinged olivaceous; edgings of wing-feathers and wing-coverts more rusty-brown than in adult.

First winter.—As adults, and usually not possible to distinguish, but edgings of outer greater wing-coverts, primary-coverts and primaries, when not worn, are rather more rusty-brown. The juvenile body-plumage, lesser and median wing-coverts, inner greater coverts and innermost secondaries are moulted July-Sept., but not primary-coverts, tail-feathers nor rest of wing-feathers.

Measurements and structure.—♂ wing 73-82 mm., tail 51-57, tarsus 20-22, bill from skull 11.5-14 (12 measured). ♀ wing 72-80. Primaries: 1st half to two-thirds as long as primary-coverts, 3rd longest, 2nd occasionally as long but usually 1-2 mm. shorter, 4th

* *Sylvia hortensis* of many authors, but *S. hortensis* is clearly the Orphean Warbler; this name not being available for the Garden-Warbler, the name *borin* must be adopted.—E.H.

1-3 shorter, 5th 5-7 shorter, 6th 7-10 shorter ; 3rd emarginated outer web. Secondaries equal to or rather shorter than 10th primary, tips rather square. Tail fairly square but outermost pair slightly shorter than rest, 12 feathers, tips rather pointed. Bill rather flat and broad at base, pointed at tip. A good many small fine rictal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill dark brown, base of lower mandible yellowish-brown ; legs and feet greyish-brown ; iris greyish-brown.

CHARACTERS.—No subspecies. Uniform brown of upper-parts and brownish-buff of upper-breast and flanks distinguish it from other British warblers of about the same size. Also wing-formula and emargination of primaries differentiate it.

FIELD-CHARACTERS.—Obscure coloration, olive-brown above and buffish-white below, lacking pronounced characters such as white throat, black head or prominent eye-stripe, is perhaps itself best clue to identity, when bird is seen, but it is even more secretive and elusive than others of the genus, and would often escape notice but for its song. This, a continuous sweet and mellow warble, is softer, less rich and modulated, and much less varied than Blackcap's full strain, although extremely difficult to distinguish from song of that species when it lacks the customary modulations and imitations. Alarm-note a harsh "check, check," whilst a vibrating "chur-r" appears to express alarm in a lesser degree or perhaps defiance.

BREEDING-HABITS.—Often nests in shrubberies and gardens, but also in bushes, and sometimes in trees. Nesting-sites average lower than those of Blackcap. *Nest*.—Of grass stalks and bents, rather more substantial than Blackcap's ; lined finer grasses and hair. *Eggs*.—Normally 4-5, rarely 6 ; 7 once or twice reported ; on average rather larger and more glossy than Blackcap's, but not distinguishable with certainty. Ground whitish to yellowish or greenish, blotched and spotted with varying shades of light olive and brown, and a few dark brown "brand-marks." Considerable range of variation ; some eggs almost white, others clouded, with yellowish blotches, etc. Average of 100 eggs, 20×14.7 mm. *Breeding-season*.—Usually late in May or early in June ; exceptionally by May 5. *Incubation*.—About 13 days ; 12 (Howard) ; shared by both sexes. Single brooded.

FOOD.—Chiefly insects in spring and early summer, especially small caterpillars, but also small coleoptera and lepidoptera. Also aphides, spiders, and occasionally worms ; in autumn berries of many kinds eaten ; also fruit (currants, raspberries, etc.).

DISTRIBUTION.—*England and Wales*.—Summer-resident. Generally distributed, but rather local and not known to breed in west Cornwall

(rare casual visitor to Scilly Isles), nor in parts of Pembroke, and rare Anglesey and west Carnarvon. *Scotland*.—Rather local in Solway area, common in Clyde and Forth areas, and in south Perthshire, north of which not known to breed, and has rarely occurred. In Shetlands, one Aug., one Oct., several May and June. In Fair Isle fairly common on both spring- and autumn-passages, and in Orkneys occurs frequently in autumn but seldom recorded in spring. In O. Hebrides, one seen Flannans (Sept.), two obtained Barra (Oct. & Nov.), several St. Kilda (Sept.), one Lewis (Aug.). *Ireland*.—Very local, unknown in most districts, but nests in various localities in all four provinces, but chiefly near the Shannon.

MIGRATIONS.—*Great Britain*.—Summer-residents begin to arrive end second week April (early dates March 25, 31, April 5 & 6), and main body in last week April up to end May. Passage-migration east coast from first week May to second week June. Southward movement of summer-residents begins early Aug., larger number leaving mid-Sept. becoming merged with passage-migrants that pass down east coast from early Sept. (in some years early Aug.) to first few days Oct. Occasional later stragglers Oct. 9-26. (Late date Nov. 10, 1913 Essex.)

DISTRIBUTION.—*Abroad*.—Europe generally (except extreme north) as far south as northern Spain in west, and Albania in east; from Russia eastwards to Persia, Transcaspia, and west Siberia. Winters in Africa. Casual Maderia; occasional Canaries. Breeding in Syria is asserted, but requires confirmation.

SYLVIA ATRICAPILLA

154. *Sylvia atricapilla atricapilla* (L.)—THE BLACKCAP.

MOTACILLA ATRICAPILLA Linnæus, Syst. Nat., ed. x, i, p. 187 (1758—*"Habitat in Europa."* Restricted typical locality: Sweden).
Sylvia atricapilla Linnæus, Yarrell, i, p. 418; Saunders, p. 47.

DESCRIPTION (Plate 12).—*Adult male. Winter*.—Fore-head and whole crown jet-black; nape ashy-grey with occasionally a brownish or dusky tinge; rest of upper-parts uniform greyish olive-brown; lores, ear-coverts, sides of neck and sides of throat ash-grey; chin, centre of throat and breast paler ash-grey, chin and throat often silvery; lower-breast and belly white; flanks grey tinged olivaceous; under tail-coverts and axillaries dark grey with white tips and fringes; tail-feathers greyish-black, outer webs fringed olive-brown; wing-feathers greyish-black, inner webs fringed white, outer webs olive-brown, those of outer primaries being more greyish; primary-coverts greyish-black fringed and tipped grey; rest of coverts with fringes and tips greyish olive-brown as mantle. This plumage is acquired by complete moult July-Sept. *Summer*.—

The body-feathers, from one to four innermost secondaries and varying number of inner greater coverts are moulted Jan.-March (occasionally April) but apparently not rest of wing-coverts and not wing- or tail-feathers. New plumage as winter. In worn plumage upper-parts often become greyer especially rump and upper tail-coverts.

Adult female. Winter and summer.—Resembling male but whole crown bright red-brown; rest of upper-parts more olive-brown than male, not tinged with greyish; nape as rest of upper-parts; lores, ear-coverts, sides of neck and sides of throat brownish-grey; breast and flanks pale brown sometimes with greyish tinge but always browner than male; tail and wings as male. Moults as male and summer plumage as winter, but abrasion makes upper-parts less olive and paler.

Nestling.—Down absent. Mouth inside bright pink; two long oval, symmetrical brownish spots at base of tongue; externally flanges whitish (C. B. Ticehurst, *Brit. B.*, iv, p. 70).

Juvenile.—Much like adult female but crown in males more blackish-brown, and in females more yellowish-brown; mantle usually more rusty-brown, not so olive; edges and tips of wing-coverts more rusty-brown; breast and flanks considerably darker than adult female, smoky-brown to dull yellowish-brown; belly dull dirty white; under tail-coverts and axillaries pale dull buff.

First winter. Male.—Like adult male and sometimes not to be distinguished from it but usually feathers of crown have brown tips and sometimes crown is a mixture of reddish-brown and black, nape sometimes greyish olive-brown instead of ash-grey. (N.B.—Some undoubted first winter males have jet-black crowns and ash-grey napes, like adults, but I have not seen an undoubted adult with brown in the crown.) The juvenile body-feathers and wing-coverts (usually outermost greater coverts are not moulted) are moulted June-Sept., but not primary-coverts, wing- or tail-feathers. *Summer.*—Moult as adult, after which becomes like adult but sometimes has some brown on crown.

First winter. Female.—Not to be distinguished from adult. Moults as first winter male.

Measurements and structure.—♂ wing 70-78 mm., tail 57-64, tarsus 21-23, bill from skull 12-14 (12 measured). ♀ wing 69-80. Primaries: 1st 1-6 mm. longer than longest primary-covert, 3rd longest, 4th usually as long but occasionally 1 mm. shorter, 2nd 4-7 shorter, 5th 1-4 shorter, 6th 5-9 shorter; 3rd to 5th emarginated outer webs. Secondaries 3-5 mm. shorter than 10th primary, tips rather square. Tail fairly square, but outermost pair rather shorter than rest, 12 feathers, tips pointed. Bill rather flat and broad at base, pointed at tip. A good many small, fine rictal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill slatish-black to brownish-black, under mandible slate; legs and feet dark slate; iris brown.

CHARACTERS AND ALLIED FORMS.—Several forms have been separated as distinct from the Atlantic Islands but only the rather small and very dark *S. a. heineken* (Madeira and Canaries) seems certain. Absence of white in tail and black cap of male and reddish-brown cap of female, besides size and wing-formula, distinguish it from other British warblers.

FIELD-CHARACTERS.—Ashy plumage (no white throat as in Orphean Warbler) and jet-black crown of male are unmistakable. Female duller, but reddish-brown crown diagnostic. Haunts woods and coppices as well as tangled hedgerows and thickets, but perhaps less retiring than Garden-Warbler. Song, usually poured forth from thick cover, but often in early spring from top of ash or other tree, is a rich and varied melody, wonderfully modulated, loud for size of the singer, and frequently mimetic. Call-note a soft whistle. Alarm expressed by bold harsh "tac, tac, tac," whilst a churring note seems, as with other warblers, to express anger.

BREEDING-HABITS.—Nests usually higher than Garden-Warbler, but not infrequently quite low down; occasionally high up. Breeds in bushes (especially snowberry), hedgerows, among honeysuckle or briars, etc. *Nest.*—Slightly built of bents, roots and grasses, lined finer materials and sometimes horsehair. *Eggs.*—Normally 5, not infrequently 4, and occasionally 6, varying greatly. Many have a light buff or stone ground, clouded and blotched with brown and ashy shell-marks and a few dark, blurred spots. The rare erythristic type has salmon-pink ground and the markings are pinkish-brown, or red-brown. Others are white, or white with a few very dark spots, etc. Average of 100 eggs, 19.3×14.5 mm. *Breeding-season.*—Usually during second half of May in England, sometimes not till June, but occasionally from end of April onward. *Incubation.*—14 days; about 15 days (Howard); shared by both sexes. Said to be often double-brooded abroad, but though fresh eggs have been taken in July, apparently seldom rears two broods here.

FOOD.—Insects, fruit and berries. In spring, small coleoptera, lepidoptera and their larvæ, diptera, hymenoptera, etc. Also aphides and spiders. Seen to take pea-louse (*Macrosiphum*) by Collinge, and exceptionally worms. Raspberries, currants, cherries and strawberries, as well as peas, are eaten; also berries of ivy, privet, elder, honeysuckle, yew, holly, mountain ash, etc., and in south Europe, oranges and figs.

DISTRIBUTION.—*England and Wales.*—Summer-resident (occasionally winter). Somewhat local, but fairly well distributed. Rare Anglesey and Llyn (Carnarvon). *Scotland.*—On west side local as far north as Argyll., breeds Jura; north of Ardnamurchan only once recorded (West Ross, Nov. 23, 1905). On east side

frequent nester as far north as Dunkeld (Perth.), and farther north breeds locally in Kincardine and Spey Valley. In other parts of north-east chiefly known as autumn migrant, but has bred once Loch Ness and near Beauly (Moray Firth). In Orkneys, Fair Isle, and Shetlands fairly regular migrant in autumn (Aug.-Oct.) but less so in spring. In Shetlands once attempted to breed, and has *probably* also bred Orkneys. In O. Hebrides straggler. Has often occurred even in north in Nov. and two or three times in Dec. *Ireland*.—Has a wide range, breeding in many counties, but in most it is scarce and even rare, being most numerous in Wicklow. Fairly often occurs in winter.

MIGRATIONS.—*Great Britain*.—Summer-residents begin to arrive fourth week March (early dates 10, 12), main body end second week April to fourth week May. Small passage-movement east coast end April to mid-June. Southward movement of summer-residents begins mid-August, bulk leaving during latter half Sept.; becoming merged in movement of passage-migrants beginning about same time, at its height between mid-Sept. and mid-Oct., and lasting to fourth week, along east and west coasts. Later, stragglers noted in most years up to mid-Nov. *Ireland*.—Some evidence of autumn passage-movements on coasts.

DISTRIBUTION.—*Abroad*.—Europe generally from about lat. 66° north in Scandinavia to Mediterranean, west to Azores and Cape Verde Islands, south to Morocco, Algeria and Tunisia, north of Atlas, east to Asia Minor, Syria and Persia, in west Siberia near Omsk. Winters in Africa and in small numbers in south Europe. Occurs on passage in Madeira and Canary Islands, but is replaced there as breeding-bird by closely-allied resident form.

SYLVIA COMMUNIS*

155. *Sylvia communis communis* Lath.—THE WHITE-THROAT.

SYLVIA COMMUNIS Latham, Gen. Syn. Suppl., I, p. 287 (1787—England).
Sylvia rufa (Boddaert), Yarrell, I, p. 406; *Sylvia cinerea* Bechstein, Saunders, p. 41.

DESCRIPTION (Plate 13).—*Adult male*. *Winter*.—Fore-head, crown and nape slate-grey, feathers edged and tipped brown; rest of upper-parts brown but upper tail-coverts more greyish tipped brown; lores greyish-white; feathers round eyelids white; ear-coverts brown to greyish-brown; chin and upper-throat white;

* This species has also been unfortunate with regard to its names. It has often been called *Sylvia rufa*, but that name was based on an unrecognizable figure, and more commonly *S. cinerea*, but Latham clearly described the English bird as *Sylvia communis* sixteen years before Bechstein.—E.H.

lower-throat and upper-breast pale buffish-pink; flanks darker and more buff, sometimes tinged pink; centre of lower-breast and belly white; under tail-coverts buff with white tips; axillaries and under wing-coverts pale brown with white fringes and tips; tail-feathers dark brown with narrow fringes and tips of very pale brown, outermost pair with outer web and most of inner web white (pure white or clouded with brown varying individually), penultimate pair with whiter tip than rest; wing-feathers dark brown tipped pale brown and edged on inner webs white, outer webs of primaries very narrowly edged white on 2nd primary and pale rufous-brown on rest, outer webs of secondaries more broadly edged rufous-brown, innermost secondaries broadly tipped and edged on both webs bright rufous-brown; primary-coverts as primaries; greater coverts as innermost secondaries; median coverts tipped paler rufous-brown; lesser coverts tipped slate-grey. This plumage is acquired by complete moult Aug.-Sept. (occasionally Oct.-Nov.). *Summer*.—A complete moult usually takes place Jan.-Feb. (occasionally March-April) but some individuals moult only partially. New feathers as winter, but crown and ear-coverts greyer. Abrasion makes crown purer grey, rest of upper-parts more greyish-brown, edgings of inner secondaries and greater coverts paler, less bright rufous.

Adult female. Winter.—Like adult male but crown brown, lesser wing-coverts brown not tipped grey, breast brownish-buff, sometimes with a slight tinge of pink, flanks without any pink tinge, white of outer tail-feathers duller and more brownish. *Summer*.—Slightly greyish on crown and ear-coverts but not so grey as male, pink tinge on breast more pronounced than in winter.

Nestling.—Down absent. Mouth inside pink posteriorly, edges yellow, two lateral dark spots on tongue-spurs and two darkish marks at tip of tongue, externally flanges pale yellow.

Juvenile.—Like adult female winter, but upper-parts rather darker, chin and belly dull white, breast and flanks darker buffish-brown than adult female (breast never with pink), median and lesser wing-coverts more yellowish brown, white of outer tail-feathers more dirty and brownish.

First winter. Male and female.—Like adult winter female, but without any tinge of pink on breast, outer tail-feathers as juvenile. The juvenile body-plumage, lesser and median wing-coverts and some innermost secondaries are moulted July-Sept. (occasionally Oct.-Nov.), but not greater coverts, primary-coverts, rest of wing-feathers or tail. *First summer. Male*.—Moult as adult, after which becomes greyer on crown and ear-coverts, and pinkish on breast, but not so grey or pink as adult male but like adult female summer. *First summer. Female*.—No grey on crown nor pink on breast.

Measurements and structure.—♂ wing 69-75 (one 79) mm., tail 58-64, tarsus 21-23, bill from skull 12-13.5 (12 measured).

♀ wing 68-75. Primaries: 1st two-thirds to three-quarters as long as longest primary-covert (occasionally equal), 3rd and 4th longest, 2nd and 5th, .5-2 mm. shorter, 6th 3-5 shorter; 3rd and 4th clearly, 5th slightly, emarginated outer webs. Secondaries 2-5 mm. shorter than 10th primary, tips fairly square. Tail somewhat rounded, outermost feathers about 5 mm. shorter than central, 12 feathers, tips rather sharply sloped off. Bill rather flat and broad at base, pointed at tip. Some small fine rictal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill greyish horn-brown, base of lower mandible bluish-flesh; legs and feet pale brown; iris yellowish-brown.

CHARACTERS AND ALLIED FORMS.—*S. c. icterops* (Caucasus, Persia, Turkestan) is slightly larger and has darker upper-parts and darker wings with paler and less rufous edgings to secondaries and coverts. Longer wing, shorter 1st primary and rufous edgings to secondaries and greater coverts at once distinguish Whitethroat from Lesser Whitethroat.

FIELD-CHARACTERS.—Absence of dark cap from crown, pure white chin and throat and, in flight, the white on outer tail-feathers separate Whitethroats from other British warblers, whilst this species differs from Lesser Whitethroat in having rufous patch on wing. A frequenter of hedges and thickets, and to some extent of gorse-covered commons and open country, is less of a recluse than most of its congeners. Song, a rapid jumble of notes sung in snatches and with great energy, is often uttered during jerky, vertical flight or from an exposed position, such as top of a hedge or a telegraph wire. Call-note, "hweet, hweet, hweet." Anger expressed by a hoarse "chur-r," and alarm by an anxious "teck, teck."

BREEDING-HABITS.—Nests in low bushes, hedge bottoms, brambles, etc., usually close to ground, but occasionally at some height above it. *Nest*.—Usually substantial, with deep cup, built of dead grasses, roots, etc., and well lined with hair, generally black. Bits of down or wool appear to be added by the hen, but nest is built by cock. *Eggs*.—Normally 4-5, exceptionally 6, and very variable. Common types have greenish or stone ground, finely speckled with ochreous and leaden spots, but markings range from big blotches, caps, or zones of spots to fine stippling and colour from oil-green to ochreous or blackish. Exceptionally erythristic type with salmon-pink ground and red-brown and grey spots, pure white eggs, or pale bluish have been recorded. Average of 100 eggs, 18.1×13.8 mm. *Breeding-season*.—From early May onward, but mostly in second half of month. *Incubation*.—11-13 days (W. Evans): male taking part (E. L. Turner). *Fledging-period*.—11 days (Brock). Some birds undoubtedly rear a second brood.

FOOD.—Mainly insects and their larvæ: coleoptera (*Agriotes*, *Phyllobius*, *Aphodius*, *Haltica*, *Apion*, etc.); lepidoptera (larvæ);

hymenoptera and diptera (*Bibionidæ* and *Muscidæ*). Also aphides and spiders. Seen to take pea-louse (*Macrosiphum*). Currants, raspberries and peas occasionally eaten; also wild berries in autumn.

DISTRIBUTION.—*England, Wales and Ireland.*—Summer-resident. Generally distributed. *Scotland.*—Generally distributed in south, and centre, thinly distributed and local in north, apparently not breeding in north Sutherland or Caithness. In Orkneys, Fair Isle, and Shetlands noted recently as fairly frequent passage-migrant in autumn and in spring, and has possibly once nested Orkneys. In I. Hebrides well known, but to O. Hebrides a somewhat rare passage-migrant, but occasionally seen in summer and bred once Lewis (1881) and once Barra (1900).

MIGRATIONS.—*Great Britain.*—Summer-residents begin to arrive last three days March (early date 25), main body from third week April to about third week May, but movements become merged in those of passage-migrants that begin end April along east and west coasts England and Wales and east coast and northern isles Scotland and last to end first week June. Southward movement of summer-residents begins last week July and continues throughout Aug. and Sept., but becomes merged in passage-migration that begins early in Sept. and lasts till first week Oct., by same route as in spring. Stragglers recorded several times in Nov. up to 10th (Essex, 1913).

DISTRIBUTION.—*Abroad.*—Europe from 65° north lat. in Scandinavia to Mediterranean, also north Algeria and north Tunisia. Winters in Africa and in small numbers in Canary Islands; casual Madeira. Replaced from Caucasus, Syria and Persia to west Siberia by *Sylvia communis icterops*.

SYLVIA CURRUCA

156. *Sylvia curruca curruca* (L.)—THE LESSER WHITE-THROAT.

MOTACILLA CURRUCA Linnæus, Syst. Nat., ed. x, i, p. 184 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Sylvia curruca (Linnæus), Yarrell, i, p. 410; Saunders, p. 43.

DESCRIPTION (Plate 13).—*Adult male and female. Winter.*—Fore-head and crown slate-grey, tinged brown; rest of upper-parts uniform greyish-brown, but rump and upper tail-coverts rather greyer and less brown than mantle; some feathers from nostrils and over eyes usually with slight hoary tips; feathers round eyelids white; lores and ear-coverts dark brownish-grey; chin, throat and sides of neck white; breast white with a pinkish tinge of varying intensity; belly and under tail-coverts white, latter with pale brown centres; flanks pale pinkish-buff; axillaries white, tinged pinkish-buff; tail-

feathers dark greyish-brown with greyish-white fringes and tips, outermost pair with outer web white and varying amount of white or brownish-white on inner web ; wing-feathers dark brown, inner webs narrowly fringed white, outer webs fringed pale greyish-brown, innermost secondaries greyish-brown ; primary-coverts dark brown with greyish-brown fringes and tips ; greater coverts grey-brown with paler fringes ; median and lesser coverts brown with brownish-grey fringes and tips. This plumage is acquired by complete moult July-Aug. *Summer*.—The body-feathers, four innermost secondaries, lesser and median wing-coverts, often central pair of tail-feathers, and rarely whole tail are moulted Jan.-Feb. (occasionally March-April), but not primary-coverts, greater wing-coverts or rest of wing-feathers. New plumage as winter. In worn plumage under-parts lose pinkish-buff tinge and wing- and tail-feathers lose most of the fringes.

Nestling.—Down absent. Mouth inside bright orange-yellow, a brownish-black spot on each side at base of tongue ; externally flanges pale yellow.

Juvenile.—Like adults, but crown like rest of upper-parts dingy grey-brown, feathers with slate-grey bases ; chin, throat, sides of neck and belly more dingy-white ; breast, flanks and under tail-coverts pale buffish-brown ; tail- and wing-feathers and greater wing-coverts fringed with darker and less grey-brown, median and lesser wing-coverts browner and less grey.

First winter.—As adult, but edges of wing- and tail-feathers as in juvenile, darker and browner than in adult ; upper-parts also a shade browner and less greyish-brown, but these distinctions disappear in worn plumage. The juvenile body-plumage and wing-coverts are moulted June-Aug., but not primary-coverts, wing- or tail-feathers. *First summer*.—Moult as adult.

Measurements and structure.—♂ wing 63-70 mm., tail 52-56, tarsus 20-21, bill from skull 10.5-12 (12 measured). ♀ wing 60-67. Primaries : 1st 2-6 mm. longer than longest primary-covert, 3rd and 4th longest, 2nd 2-4 shorter usually between 5th and 6th but sometimes as long as 5th and sometimes as short as 6th, 5th .5-2 shorter, 6th 3-6 shorter ; 3rd to 5th emarginated outer webs. Rest of structure as Whitethroat.

Soft parts.—Bill slate-black, base of lower mandible paler ; legs and feet dark bluish-lead colour ; iris pale brown.

CHARACTERS AND ALLIED FORMS.—*S. c. affinis* (Siberia, Manchuria) is like typical form but has 2nd primary always shorter than 6th and sometimes between 7th and 8th ; *S. c. minula* (Afghanistan, eastern Turkestan) like *S. c. affinis* but smaller and with considerably paler upper-parts ; *S. c. halimodendri* (south-eastern Kirghiz Steppe) said to be like last but with longer bill, more brownish-grey and less sandy back and darker crown. Want of bright rufous edgings to secondaries and greater coverts and smaller size distinguish it from

Whitethroat. For distinctions of Rüppell's Warbler see under that species.

FIELD-CHARACTERS.—Rather smaller than Whitethroat and underparts are purer white and lores and ear-coverts dark brown. Best distinction in field, however, is absence of broad rufous edges to secondaries. Frequents tangled hedges, thickets and gardens, but is more retiring in habits than Common Whitethroat. Song, a loud, rattling "sip, sip, sip," very like song of Cirl Bunting, sometimes but not always preluded by a low sweet warble only audible at close quarters, and more rarely followed by a few babbling notes. Notes expressing anger and anxiety are similar to those of last species, a hoarse "curre" and a clicking "kek, kek, kek," respectively.

BREEDING-HABITS.—Nests in thick hedges, bushes and shrubs, generally between 2 and 5 ft. from ground. *Nest.*—Smaller than Whitethroat's and lacks the thick base, built of dry stalks and roots, lined sometimes with roots only and sometimes freely with horsehair. *Eggs.*—4-6, rather sparingly and boldly marked, often in zone, with sepia-brown and grey shell-marks on creamy-white ground. Some sets very sparsely marked. Average of 100 eggs, 16.5×12.6 mm. *Breeding-season.*—From beginning of May, exceptionally at end April, but usually towards mid-May. *Incubation.*—10-13 days, probably averaging 11 days: male takes part (E. L. Turner). Apparently single brooded.

FOOD.—Chiefly larvæ and eggs of insects, especially larval forms of moths; also diptera, etc. Aphides largely eaten, and occasionally small worms (Naumann). In summer and autumn cherries, currants and berries of many kinds, including blackberries and elderberries. Lynes records hard seeds in stomach.

DISTRIBUTION.—*England.*—Summer-resident. Generally distributed, except in extreme south-west (where it nests in Somerset and Devon, but is only a casual autumn-migrant to Cornwall, and has occurred only once in Scilly Isles) and in north, being local in Cumberland, Westmorland, Durham and Northumberland. *Wales.*—Fairly well distributed in eastern parts, but rare or unknown in coastal counties on west side. *Scotland.*—All nesting-records doubtful, but those from Dumfries, Ross, and Stirling may possibly be authentic, otherwise only known as a passage-migrant, rare and occasional in Solway and Clyde areas, twice (once singing June) west Inverness, but not known elsewhere on west side; on east coast seems fairly regular in small numbers on spring and autumn-passage, having been observed for several years at Isle of May (Forth), but on mainland very rarely recorded. Orkneys small numbers in spring and autumn at Sule Skerry, Aukerry and Pentland Skerries; Fair Isle common spring (April to June)

and autumn (Aug. to Oct.); Shetlands, Lerwick, three times in autumn; O. Hebrides, St. Kilda, several Sept. 1910, one Oct. 1911, Flannan Isles, one Sept. 1904, one May 1905, one Aug., one Oct. 1914, Barra, one Oct. 1898. *Ireland*.—Four. Tearaght Light (Kerry) Oct. 1, 1890, Inisrahull Light (Donegal) Oct. 10, 1899, Rockabill (Dublin) May 13, 1913, Maidens (Antrim) Sept. 19, 1915.

MIGRATIONS.—*Great Britain*.—Summer-residents begin to arrive April 8th (early date March 28); main body third week April to fourth week May. Passage-migration east coast and northern isles end April to end first week June. Southward movement of summer-residents begins end July, main body leave during middle weeks Sept. Passage-movement east coast mid-August to first week Oct., stragglers frequent to mid-Oct. (Late dates Lincoln Oct. 20, 1910, Yorks. Oct. 27, 1909, Essex Nov. 30, 1912, Hereford Dec. 15, 1910.)

DISTRIBUTION.—*Abroad*.—Breeds in Europe from about 64°–65° in Scandinavia and north Russia to Mediterranean, east to Ural and apparently to Caucasus, Asia Minor and Persia, but absent from Spain. Winters principally in north-east Africa. Replaced by other races in Siberia and central Asia, and Khirgiz Steppes.

157. *Sylvia rüppelli* Temm.—RÜPPELL'S WARBLER.

SYLVIA RUPPELI (corr. *rüppelli*) Temminck, Pl., Col. 245, fig. 1 (1823)—Kandia; though occurring in Kandia (Crete) Temminck's type came evidently from the Red Sea or from Egypt; cf. Cretzschmar, *Atlas Reise*, p. 29).

Sylvia rüppelli H. W. Ford-Lindsay, *Brit. B.*, VIII, p. 93.

DESCRIPTION (Plate 13).—*Adult male. Winter*.—Fore-head, lores and crown black, feathers lightly tipped grey; rest of upper-parts french-grey slightly darker on upper tail-coverts; chin and throat black, some feathers lightly tipped white; from base of bill to base of ear-coverts a conspicuous white moustachial stripe; ear-coverts dark french-grey, sometimes almost black; breast, belly and under tail-coverts greyish-white tinged pink, centre of belly pure white; flanks and axillaries pale grey, slightly tinged pink; tail-feathers black, central pair and outer webs of others tinged grey and fringed whitish, outermost pair white with only base black, next (penultimate) pair with the tip white extending to about distal third of inner web, next pair with smaller white tip; wing-feathers black, tipped and fringed on inner and outer webs greyish-white, innermost secondaries fringed buffish-pink; primary-coverts as primaries; greater coverts tinged grey and inner ones fringed buffish-pink; median coverts french-grey tipped whitish; lesser coverts french-grey. This plumage is acquired by complete moult Sept.-Nov. *Summer*.—No moult, and abrasion

causes little difference except that fringes of wing- and tail-feathers become mostly worn off and crown and throat become uniform black.

Adult female.—Differs from adult male in having fore-head and crown greyish-brown with varying amount of brownish-black usually confined to centres of feathers, thus giving a somewhat mottled appearance, but sometimes middle of crown is nearly black; rest of upper-parts brown with slight greyish tinge, especially on rump; moustachial stripe showing distinctly whiter than chin and throat, which are usually buffish-white often more or less mixed with blackish; upper-breast pale buff; flanks browner buff; centre of breast and belly white; axillaries tinged buff; tail- and wing-feathers as adult male but much browner not so black; inner secondaries and greater coverts fringed pale buff.

Nestling.—(Not examined.)

Juvenile. Male and female.—Much like adult female but crown and throat with no trace of black; wing-feathers and greater coverts edged and tipped buffish-brown.

First winter and summer. Male.—As adult male but crown not so uniformly black, often marked grey or brown; rest of upper-parts not so pure a grey, but tinged brownish; feathers of throat more fringed white; wing-feathers and primary-coverts browner and edged browner; outer greater coverts and many of the median and lesser coverts also browner. The juvenile body-plumage and a varying number of innermost secondaries, inner greater coverts and some median and lesser coverts are moulted in autumn, but not rest of wings or tail. *Female.*—Difficult to distinguish from adult female, but apparently less black on crown and none on chin and throat and edgings of wings and wing-coverts browner.

Measurements and structure.—♂ wing 68–73 mm., tail 59–64, tarsus 20.5–22, bill from skull 13–14 (14 measured). ♀ wing 66–69. Primaries: 1st usually about two-thirds as long, but occasionally as long as longest primary-coverts, 3rd and 4th longest, 2nd and 5th sometimes as long but usually 1–3 mm. shorter, 6th 3–6 shorter; 3rd to 5th emarginated outer webs. Secondaries between 9th and 10th primaries or slightly shorter, tips rounded. Tail somewhat rounded, outer three pairs being shorter than central three pairs, 12 feathers, tips rather sharply sloped off. Bill fine, somewhat compressed, very little flattened at base. A few short, fine nasal and rictal bristles.

Soft parts.—Bill dark horn, paler at base of lower mandible; legs, feet, and iris bright red-brown.

CHARACTERS.—Black crown and throat and white moustachial stripes of male very distinctive; female much like Lesser White-throat, but always has some blackish markings on feathers of crown, more white on outer tail-feathers and shorter 1st primary.



(HALF NATURAL SIZE.)

1, Whitethroat (*Sylvia c. communis*), ♀ adult. 2, Lesser Whitethroat (*S. c. curruca*) ♀ adult. 3, male adult, 4, female adult Rüppell's Warbler (*S. rüppelli*). 5, ♂ adult, 6, ♀ 1st winter Sardinian Warbler (*S. m. melanocephala*). 7, ♂ adult, 8, ♀ juv. Subalpine Warbler (*S. c. cantillans*). 9, ♂ adult, 10, juvenile Dartford Warbler (*S. u. dartfordiensis*).

Female of *S. melanocephala* is smaller, has longer 1st and shorter 2nd primaries and graduated tail.

FIELD-CHARACTERS.—Black throat and white moustache conspicuous in male, otherwise much like Sardinian Warbler but larger, and tail relatively shorter and squarer. Habits similar to Sardinian. Song also similar but fuller and more musical and frequently uttered in flight in conjunction with butterfly-like movement of wings. Alarm-note harsher and louder, more “chirpy” and less “wheezy” than that of Sardinian, reminding one of two pebbles being knocked together rapidly; occasionally terminated by musical “pit-pit.” (H. Lynes.)

BREEDING-HABITS.—Haunts bushes and thickets, especially near lakes and watercourses. *Nest.*—Neatly built of dead grasses and stalks, lined with horsehair. *Eggs.*—4-5 in number, somewhat resembling those of Spectacled Warbler; pale greenish ground, closely mottled all over with yellowish spots and fine grey shell-marks. Average of 25 eggs, 17.8×13.9 mm. *Breeding-season.*—May 14-28 in Asia Minor (Selous).

FOOD.—Insects, but no exact details available.

DISTRIBUTION.—*England.*—Two males, Baldslow, Hastings, Sussex, May 5, 1914 (*ut supra*).

DISTRIBUTION.—*Abroad.*—Breeds in Greece, Asia Minor, Crete, and probably in Palestine and Cyprus. Passes through Egypt. Winters in north-east Africa (Nubia, Sudan, Red Sea).

SYLVIA MELANOCEPHALA

158. *Sylvia melanocephala melanocephala* (Gm.) — THE SARDINIAN WARBLER.

MOTACILLA MELANOCEPHALA Gmelin, Syst. Nat., I, ii, p. 970 (1789—Sardinia).

Sylvia melanocephala, C. B. Ticehurst, Bull. B.O.C., XIX, p. 105; T. Parkin, Brit. B., I, p. 86; Saunders, p. 46 (in text).

DESCRIPTION (Plate 13).—*Adult male. Winter.*—Fore-head, crown, nape, lores and ear-coverts glossy jet-black; rest of upper-parts dark ash-grey with slight brownish tinge; chin and throat white; breast and belly rather less pure white, sometimes with slight pink tinge on upper-breast and vent; sides and flanks ash-grey; tibial feathers ash-grey tipped pink; under tail-coverts ash-grey tipped white; axillaries ash-grey; under wing-coverts whiter; tail-feathers black fringed ash-grey, outer pair with outer web and distal quarter to third white, next three pairs with varying amount of white or yellowish-white at tip; wing-feathers brown-black, inner webs fringed whitish, outer webs fringed ash-

grey, innermost secondaries more widely fringed and tipped ash-grey; all wing-coverts as innermost secondaries; outer webs of feathers of "bastard wing" narrowly fringed whitish. This plumage is acquired by complete moult July-Nov. (occasionally Dec.). *Summer*.—The body-feathers and occasionally central pair of tail-feathers are moulted Jan.-Mar., but not wing-feathers nor any wing-coverts. New plumage as winter.

Adult female. Winter.—Fore-head, crown, and lores ashy-grey, feathers with darker, sometimes blackish centres; nape greyish-brown; rest of upper-parts brown but rump and upper tail-coverts usually more greyish; ear-coverts brownish-grey; chin, throat and centre of belly white; breast and sides pale pinkish-brown; flanks darker brown with slight pinkish tinge; under tail-coverts and axillaries pale brown; tail-feathers brown-black fringed grey-brown, outer feathers with less pure white than adult male; primaries brown-black inner webs fringed dull whitish, outer webs fringed grey-brown, secondaries same but fringes of outer webs browner; greater wing-coverts dark brown with paler brown fringes and tips; median and lesser wing-coverts with brownish-grey fringes and tips; outer webs of feathers of "bastard wing" brownish-white. Moult as male. *Summer*.—Moult as male. New plumage as winter.

Nestling.—(Not examined.)

Juvenile. Male.—Much as adult female but fore-head, crown and ear-coverts dark sooty-brown; sides and flanks rather paler and more buffish-brown than adult female. *Female*.—As juvenile male but fore-head, crown and ear-coverts browner and almost uniform with rest of upper-parts; rump and upper tail-coverts browner; wing- and tail-feathers browner and fringes of tail-feathers and primaries browner.

First winter. Male.—Like adult male but rather more tinged with brown on crown and especially nape; rest of upper-parts more tinged with brown (occasionally, however, adults have as much brown tinge); primary-coverts and wing-feathers much browner than adult, fringes of tail-feathers not such pure grey and outer tail-feathers usually with not such pure white. The juvenile body-plumage, wing-coverts and three or four innermost secondaries are moulted July-Dec., but not primary-coverts, tail nor rest of wing-feathers. *Summer*.—Moult as adult but sometimes whole tail moults. Plumage as adult but wing-feathers browner but not so distinctly different as in winter, as those of adults become browner by fading.

First winter. Female.—Like adult female but fore-head, crown and ear-coverts browner; rump and upper tail-coverts browner; wings and tail browner. Moult as in male. *Summer*.—Moult as male, after which it is difficult to distinguish from adult female.

Measurements and structure.—♂ wing 57-62 mm., tail 58-65, tarsus 20-23, bill from skull 12-13.5 (12 measured). ♀ wing 56-63. Primaries : 1st 2-6 mm. longer than longest primary-coverts, 3rd to 5th equal and longest (5th rarely 1-2 shorter), 2nd 4-5 shorter (between 7th and 8th or equal to 7th or 8th), 6th 1-3 shorter, 7th 3-5 shorter ; 3rd to 5th emarginated outer webs. Secondaries about 2 mm. shorter than 10th primary, tips fairly square. Tail graduated, central pair longest, outermost pair 7-12 mm. shorter, 12 feathers, tips rounded. Bill fine, base rather flatter and broader, tip fine and compressed. A few small and fine rictal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill black, base of lower mandible pale horn ; legs and feet flesh-brown ; iris bright brown ; orbital ring and eyelids salmon-pink in adult, pinkish-brown in juvenile.

CHARACTERS AND ALLIED FORMS.—*S. m. momus* (Palestine, Syria) is very similar but rather smaller, male is paler on under-parts especially on flanks, female is browner on crown and has paler and more buffish flanks ; *S. m. norrisæ* (Fayum—Egypt) is browner on upper-parts and has under-parts washed with pink) ; *S. m. leucogastra* (western Canaries) is similar to last but with considerably less white at tips of outer tail-feathers. Female *S. ruppelli* is larger, has shorter 1st and longer 2nd primaries, and paler upper-parts. *S. atricapilla* is much larger and has no white in tail.

FIELD-CHARACTERS.—Graduated, black and white tail, small size as compared with Blackcap, black cap and pure white throat of male are all noticeable characters, but females and young require more careful observation and graduated tail which is constantly spread must be looked for. Found on hills and in plains both in trees and in short scrub. It is restless and active and easily alarmed, when it seeks cover (but soon reappears) and utters stuttering string of harsh alarm-notes loud for size of bird. (H.F.W.)

BREEDING-HABITS.—Nests in thick bushes in gardens and sheltered places ; about 2 to 4 ft. from ground, sometimes in low branches of trees. *Nest.*—Neatly and substantially built of dead stalks and grasses, with a little down, lined with finer grasses and sometimes with roots or horsehair. *Eggs.*—Normally 4-5, sometimes only 3 : Lilford reports 6 once. Variation extreme : some types not unlike Whitethroat's, or Sedge-Warbler's, others resemble very large and boldly marked eggs of Lesser Whitethroat, while erythristic types are not uncommon, some being thickly speckled with light sienna-brown and grey or boldly spotted and blotched with sienna-red. Average of 100 eggs, 17.8×13.6 mm. *Breeding-season.*—From mid-March onward in Spain, but most eggs found in second half April. Probably rears two broods at any rate. *Incubation.*—Period not known, but male shares.

FOOD.—Chiefly larvæ of insects, especially smaller lepidoptera and orthoptera. Also spiders and aphides. Fruit and berries eaten in latter part of year.

DISTRIBUTION.—*England.*—One, male, near Hastings (Sussex), June 3, 1907 (*ut supra*). A bird seen at Exmouth (Devon) April 16, 1890, may possibly have been of this species (*cf.* Saunders, p. 46).

DISTRIBUTION.—*Abroad.*—Breeds in south Europe, Asia Minor, and north-west Africa, and winters partly in same countries, partly in Sahara, Palestine, and Nubia. Replaced by allied races in western Canaries, Fayum (Egypt) and Syria, the latter race also wintering in Nubia.

SYLVIA CANTILLANS*

159. *Sylvia cantillans cantillans* (Pall.)—THE SUBALPINE WARBLER.

MOTACILLA CANTILLANS Pallas, in Vroeg's Cat. Verzam. Vogelen, etc., *Adumbratiuncula*, p. 4 (1764—Italy).

Sylvia subalpina Bonelli, Saunders, p. 53.

DESCRIPTION (Plate 13).—*Adult male.* *Winter.*—Whole upper-parts ash-grey, tinged brown, especially on mantle and back; lores and ear-coverts as crown but slightly darker; from base of lower mandible a narrow white stripe forming moustachial streak; centre of lower-breast and belly white; rest of under-parts varying from pale pink to pinkish-chestnut, with narrow white tips to many feathers; under tail-coverts pinkish-brown with long white tips; tail-feathers dark greyish-brown, fringed ash-grey, outer pair with outer web and distal quarter to half of inner web white, next three pairs with varying amount of white at tip; wing-feathers dark greyish-brown, inner webs narrowly fringed whitish, outer webs of primaries narrowly fringed brownish-white and of secondaries fringed pale brown; primary-coverts as primaries; median and lesser coverts ash-grey with dark brown bases. This plumage is acquired by complete moult July-Sept. *Summer.*—No moult and little alteration by abrasion.

Adult female. *Winter.*—Upper-parts pale grey-brown, sometimes some ash-grey on crown and rump; feathers of lores with whitish tips; ear-coverts pale greyish-brown; moustachial stripes white but not very distinct; chin, throat, breast and flanks pinkish-buff, with some pink on chin, throat and breast; white of breast and belly rather more extensive than in male; tail-feathers browner

* With the unfortunately unavoidable acceptance of the names in Vroeg's Catalogue, rediscovered some years ago by Mr. Sherborn, it becomes necessary to adopt the name *cantillans*, which has 56 years' priority over *subalpina*!—E.H.

than in male and with brown fringes, outer tail-feathers with less and duller white ; wing-feathers and primary-coverts browner with brown fringes ; lesser and median coverts with grey-brown, not ash-grey fringes. Moults as male. *Summer*.—No moult. Abrasion makes crown rather greyer and pink of throat and breast rather more prominent.

Nestling.—(Not examined.)

Juvenile.—Upper-parts as adult winter female but only bases of feathers grey ; under-parts buff, whitish on chin and white in centre of belly ; fringes of tail- and wing-feathers and wing-coverts more rusty-brown than in adult female.

First winter. Male.—Like adult but wing- and tail-feathers browner, not so greyish-brown and fringes more rusty-brown. The juvenile body-plumage, lesser and median wing-coverts and probably greater coverts and some innermost secondaries are moulted Aug.-Sept., but not primary-coverts, wing- or tail-feathers.

First winter and summer. Female.—Like adult but upper-parts browner, not so greyish-brown ; under-parts paler, chin, throat and lores being buffish-white with no pink ; breast pale buff ; flanks bright buff ; centre of belly white ; fringes of tail- and wing-feathers and greater wing-coverts more rusty-brown.

Measurements and structure.—♂ wing 55-64 mm., tail 49-55, tarsus 18-20, bill from skull 10-11.5 (12 measured). ♀ wing 55-60. Primaries : 1st equal to or 1-3 mm. shorter or longer than primary-coverts, 3rd and 4th longest, 2nd 1-4 mm. shorter, usually between 5th and 6th but sometimes as long as 5th or as short as 6th rarely between 6th and 7th, 5th .5-2 mm. shorter, 6th 3-4 shorter ; 3rd to 5th emarginated outer webs. Secondaries 2 mm. shorter than 10th primary, tips fairly square. Tail somewhat rounded, three outer pairs being graduated, 12 feathers, tips rather sharply sloped off. Bill fine, base rather flatter and broader. A few small and fine rictal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill dark brown, base of lower mandible pale brown ; legs and feet pale brown ; iris pale ochre ; orbital ring orange.

CHARACTERS AND ALLIED FORMS.—*S. c. inornata* (north-west Africa) has throat and breast brick-red rather than pinkish ; *S. c. albistriata* (south-east Europe, Asia Minor) has 2nd primary longer than 5th and a broader white moustachial stripe. Young females are much like some brown female Lesser Whitethroats, but are usually smaller and with shorter 1st primary, paler lores and ear-coverts, more buffish, less pure white chin and throat contrasted with the pure white moustachial stripe.

FIELD-CHARACTERS.—Very skulking, haunting thick scrub, from which its clicking alarm-note may be frequently heard, but only occasional glimpses caught, when white outer tail-feathers furnish a good character. The males utter a little song while rising and

falling in the air. Chestnut-red throat of male distinguishes it from all the smaller warblers (except perhaps Dartford which lacks white moustachial streak found in both sexes of Subalpine), and red eyelids of both sexes prevent confusion with anything but La Marmora's Warbler, in which hen has grey and not white under surface as in Subalpine. (F.C.R.J.)

BREEDING-HABITS.—Nests in low bushes, sometimes evergreens, such as myrtle, and often in cistus plants about 1 to 3 ft. from ground. *Nest.*—Slight, but neat, built of dry grasses, and bits of down or thistle, lined finer grasses or sometimes with hair or fibre. *Eggs.*—3 or 4 as a rule, rarely 5. Greenish or greyish-white in ground-colour, with fine spots of dark umber and ashy-violet, chiefly towards large end. A beautiful erythristic type (Spain) has pinkish ground and bold chestnut-red spots or blotches and sometimes lavender shell-marks. Average of 69 eggs, 16.5×12.9 mm. *Breeding-season.*—From second week April to early June, so probably double-brooded. *Incubation.*—Chiefly by female, but Lynes once records flushing male from eggs.

FOOD.—Chiefly insects and their larvæ. Lynes records beetles, caterpillars, and a few small grass-seeds in stomach.

DISTRIBUTION.—*Scotland.*—Two. One St. Kilda (O. Hebrides) June 14, 1894 (Sharpe, *Bull. B.O.C.*, iv, p. 9). One Fair Isle (Shetlands) adult male, May 6, 1908 (W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1909, p. 72, and *Studies in Bird Migration*, II, p. 128).

DISTRIBUTION.—*Abroad.*—Italy, Sardinia, Corsica, Sicily, southern Alps to Savoy, south-east France, Spain, and Portugal. Partially migratory, passing through Algeria. Replaced as breeding bird in north-west Africa, and in south-east Europe and Asia Minor, by allied races.

SYLVIA UNDATA

160. *Sylvia undata dartfordiensis* Lath.*—THE DARTFORD WARBLER.

SYLVIA DARTFORDIENSIS Latham, Gen. Syn. Suppl., I, p. 287 (1787—Bexley Heath, near Dartford).

Melizophilus provincialis, Selby, Brit. Orn., I, p. 219 (1833); *Sylvia provincialis* Seebohm, Hist. Brit. B., I, p. 414.

Melizophilus undatus (Boddaert), Yarrell, I, p. 398; *Sylvia undata* (Boddaert), Saunders, p. 55.

* The Dartford Warbler had been in the undisturbed possession of the name *provincialis* for over 60 years, when Gray, and later Newton and Dresser, correctly adopted *undata*; and as the British race is darker and smaller it must be called *S. u. dartfordiensis*. The generic separation of *Melizophilus* is not tenable.—E.H.

DESCRIPTION (Plate 13).—*Adult male. Winter.*—Crown and nape dark slate, feathers tipped dark chocolate-brown; rest of upper-parts dark chocolate-brown; lores, behind eyes, ear-coverts and sides of neck slate-grey, lores with minute ashy specks and rest with tinge of brown; centre of belly white; rest of under-parts dark brownish-pink, feathers with slight whitish edgings, flanks browner, less pinkish, feathers of chin and throat with wedge-shaped white tips; under tail-coverts pinkish-brown tipped whitish; axillaries slate-grey tinged pink; tail-feathers black edged slate-grey, outer pair with tip and outer edge of outer webs dull white, next two pairs with a little dull white at tip; wing-feathers brown-black, inner webs narrowly edged dull greyish, outer webs narrowly edged pale greyish-brown but those of inner secondaries more broadly edged and tipped rufous-brown; primary-coverts as primaries; greater and median coverts as innermost secondaries; lesser coverts dark slate-grey with small brown tips. This plumage is acquired by complete moult Aug.-Nov. *Summer.*—Apparently no moult.* Abrasion makes crown greyer, edgings of wing-feathers paler and ear-coverts and sides of neck purer grey; white tips to feathers of throat gradually wear down, while whitish edgings to feathers of rest of under-parts wear off making them darker.

Adult female. Winter and summer.—Like adult male but crown browner and rest of upper-parts rather paler brown; lores, ear-coverts and sides of neck grey-brown; under-parts considerably paler and browner, less pink than male; tail and wings dark brown, not so black, and edgings of tail-feathers greyish-brown.

Nestling.—Down absent (skin dark). Mouth inside pale dull yellow, two black spots on tongue; externally flanges pale dull yellow,

Juvenile.—Somewhat like adult female but upper-parts, including lores, ear-coverts and sides of neck, duller, more dark earth-brown to dark sooty-brown; under-parts brownish-buff; centre of belly and chin paler, sides of breast and flanks darker and browner; wing-coverts browner, not with such rufous edgings.

First winter.—Apparently like adults but tail-feathers of male rather browner and with brown instead of slate-grey edgings. The juvenile body-plumage, wing-coverts and innermost secondaries are moulted Aug.-Nov., but not primary-coverts, tail-feathers nor rest of wing-feathers.

Measurements and structure.—♂ wing 50-54 mm., tail 59-66, tarsus 18-20, bill from skull 11-12 (9 measured). ♀ wing 50-52. Primaries: 1st 2-5 mm. longer than primary-coverts, 4th and 5th longest, 3rd and 6th usually as long but occasionally 1 shorter, 2nd 3-7 shorter between 8th and 10th, 7th 1-2 shorter; 3rd to 5th clearly and 6th slightly emarginated outer webs. Secondaries 1-2 shorter

* One specimen of *S. u. undata* labelled February and one of *S. u. toni* labelled March were moulting in the body-plumage.

than 10th primary, tips rounded. Tail graduated, two central pairs longest, rest graduated, outermost 7-14 mm. shorter than central, 12 feathers, tips somewhat pointed, webs being sharply sloped off. Bill fine, base slightly flatter and broader. Some fine rectal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill blackish-horn, base of lower mandible pinkish-yellow; legs and feet deep straw; iris and orbital ring bright yellow-brown.

CHARACTERS AND ALLIED FORMS.—*S. u. undata* (south Europe) is considerably more slate-grey and paler on upper-parts and rather paler on under-parts; *S. u. aremorica* (north-western France) is said to be slightly paler on upper-parts than British form; *S. u. toni* (north-west Africa) is like typical form but slightly smaller; *S. u. corsa* (Corsica, Sardinia) is as small as last but has paler and more vinous under-parts. Small size, dark colour and long graduated tail easily distinguish it from other British warblers.

FIELD-CHARACTERS.—Small size, dark coloration and long tail, which it has a habit of holding fairly erect, makes Dartford Warbler easy to distinguish when seen. But except in very bright weather, when it fairly frequently appears for a moment on top of a gorse bush, or when it has young and becomes much bolder, it requires patient watching to see it emerge from thick cover of gorse and heather it frequents. Harsh, somewhat prolonged "tchirr" 2 or 3 times repeated is very distinctive, sounding occasionally like White-throat's note but of a different quality and not to be confused when once known. Also has rather soft "tut" alarm-note and a beautiful little song. Flight weak and wavering and generally quite close to ground. (H.F.W.)

BREEDING-HABITS.—Nests either in long heather or gorse. In heather it is generally low down, but in gorse is found at varying heights. *Nest*.—Compactly built of bits of ling, grasses, moss, etc. (when built in heather may be found almost entirely built of bits of ling), lined with a few feathers, roots, and hair, and studded externally with cocoons of spiders. When in gorse, dwarf-furze is also used as nesting-material. *Eggs*.—Normally 3-4, occasionally 5, white or greenish in ground-colour, finely spotted with olive-brown and leaden-grey, sometimes evenly distributed or forming zones or caps at large end. Average of 100 eggs, 17.5×13.2 mm. *Breeding-season*.—Variable, but most eggs laid about May 20, though fledged young have been found on May 3 and fresh eggs late in June. *Incubation*.—12-13 days (Walpole Bond): about 12 days (M. B. Holcombe), chiefly at any rate by hen. *Fledging-period*.—About 13 days.

FOOD.—Chiefly insects: small coleoptera, lepidoptera (butterflies, moths large and small, caterpillars): diptera (*Tipula*, *Muscidae*,

Cheironomidæ). Also spiders (*Epeira*, etc.). Said to eat blackberries in autumn (Blyth).

DISTRIBUTION.—*England*.—Resident. Very local. Fluctuating in numbers. Main nesting-haunts Hants. and Surrey, extending into Isle of Wight, Dorset, Sussex, and possibly Berks. and Wilts.; also breeds small numbers in Cornwall and east Suffolk, probably Essex and possibly Oxon.; a pair or two recorded as breeding tolerably regularly at one locality in Salop. Some evidence that a pair bred Cannock Chase (Staffs.) about 1870, and formerly bred in Kent, Middlesex, and Devon, but now extinct in these counties. Recorded breeding in Somerset and Herts. requires confirmation. Rare vagrant to other counties in southern half of England. *Recent* records of stragglers are: Warwick, one Oct. 1914; Staffs., one seen March 1915; Kent, one Oct. 1914. *Ireland*.—Female Tuskar Rock (Wexford), Oct. 27, 1912 (R. M. Barrington, *Brit. Birds*, VI, p. 220).

DISTRIBUTION.—*Abroad*.—Birds from Channel Islands and north-west France have been separated but are doubtfully distinct from British form. Replaced by closely-allied races in south-west Europe and north-west Africa.

Genus AGROBATES Swains.

Agrobates Swainson, Nat. Hist. & Class B., II, p. 241 (1837—Monotype: *A. galactotes*).

Differs from *Sylvia* by the tail, which consists of very broad feathers and is strongly rounded; tail is often spread out like a fan and is cinnamon-red, the lateral rectrices with white tips and black subterminal bars. 1st primary longer than primary-coverts, 2nd equal to 6th or between 5th and 6th, more rarely between 6th and 7th, or between 4th and 5th. Tarsus scutellated in front. Sexes alike, young like old. One species in several subspecies. Mediterranean region and west Asia to Sudan. Nest open, eggs spotted.

AGROBATES GALACTOTES*

161. *Agrobates galactotes galactotes* (Temm.)—THE RUFOUS WARBLER.

SYLVIA GALACTOTES Temminck, Man. d'Orn., ed. II, i, p. 182 (1820—S. Spain).

Aëdon galactodes (Temminck), Yarrell, I, p. 355; Saunders, p. 73.

* The generic name "*Aëdon*" has erroneously been accepted for the Rufous Warblers. This name was first introduced by Forster, 1817, for the Nightingales; Boie's use of the same name for the Rufous Warblers, in 1826, is therefore null and void.—E.H.



Rufous Warbler (*Agrobates g. galactotes*). Tail from underneath.

DESCRIPTION.—*Adult male and female. Winter.*—Whole upper-parts uniform brownish-chestnut but rump and upper tail-coverts rather more rufous; broad, distinct line from nostrils, over and behind eye creamy-white; centre of lores and line immediately behind eye dark brown; under eye whitish; ear-coverts pale brown; under-parts sandy-white, chin, centre of belly and under tail-coverts more whitish than breast, which is slightly darker, and flanks, which are still darker; tail-feathers bright rufous-chestnut, central pair with a little blackish at tip, 2nd pair with broad black subterminal band and narrow white tip, 3rd pair with twice as much white at tip, 4th pair with twice as much white as 3rd, 5th pair again with twice as much white as 4th, 6th (outermost) pair with still more white and black subterminal band narrower than in the other feathers; wing-feathers dark brown, inner webs edged pale isabelline, outer webs of primaries edged pale chestnut-brown and of secondaries but with fringes of creamy-white, tips of secondaries creamy-white, innermost secondaries much as mantle with darker brown centres; primary-coverts dark brown, with pale brown edges and creamy tips; greater coverts much as primary-coverts but with broader creamy edges; median and lesser coverts much as mantle with creamy tips. (N.B. —The depth of the colour in upper-parts varies somewhat.) This plumage is acquired by complete moult in autumn, beginning sometimes in July. *Summer.*—No moult and very little effect by abrasion.

Nestling.—(Not examined.)

Juvenile.—Like adults but upper-parts rather paler and more sandy, less chestnut; feathers of throat, breast and sides with dark sandy tips, giving a slightly speckled appearance; flanks rather paler than adult; tail-feathers with less black than in adults and usually with none at all on outer webs.

First winter.—Like adult. The juvenile body-feathers, and apparently greater, median and lesser wing-coverts and two or three innermost secondaries are moulted June-Oct., but not primary-coverts nor rest of wing-feathers. The tail would seem to moult, as in all winter and summer birds the tail-feathers have well-marked black subterminal bands but no specimens actually moulting tail have been examined.

Measurements and structure.—♂ wing 85-91 mm., tail 68-75, tarsus 26-28, bill from skull 18-20 (12 measured). ♀ wing 82-86, tail 67-71. Primaries: 1st 3-6 mm. longer than primary-coverts, 3rd and 4th longest, 5th sometimes as long but usually 1 mm. shorter, 6th 3-5 shorter, 2nd 3-6 shorter; 3rd and 4th clearly, and 5th slightly, emarginated outer webs. Secondaries about equal 10th primary, tips rather square. Tail rounded laterally, outermost pair 6-10 mm. shorter than central, 12 feathers, tips rounded. Distal half of bill compressed, basal portion broader and flatter. Some fine, short rictal and nasal bristles. Nostrils not covered by feathers.

Soft parts.—Bill dark horn-brown, base of lower mandible greyish-flesh; legs and feet pale brown; iris brown.

CHARACTERS AND ALLIED FORMS.—*A. g. minor* (Abyssinia, north Somaliland, south Sahara) is like *A. g. galactotes* but decidedly smaller and with less black on subterminal bands of tail-feathers; *A. g. familiaris* (south Caucasus to Turkestan and Baluchistan) is like *A. g. syriacus* but paler and more greyish-brown on upper-parts. The bright rufous tail with white tips and black subterminal bands distinguish the species.

FIELD-CHARACTERS.—The fox-red colour of its upper-parts and the white and black tips to the tail, which is frequently erected and spread are very distinctive. It has a beautiful papilio-like downward flight with uplifted wings and frequently sings as it descends. (H.F.W.)

BREEDING-HABITS.—Breeds in hedges of prickly pear or bushes, generally within a few feet of ground. *Nest*.—Roughly and untidily built of grasses, fibre, bents, with a neat cup lined fine roots, hair, etc., and almost invariably a piece of snake-skin. *Eggs*.—4-5, greyish-white or greenish-grey ground, closely freckled and spotted all over with umber and ashy-brown. Average of 113 eggs, 22.4×16.4 mm. *Breeding-season*.—Most eggs laid in Spain and north Africa in second half of May or early in June. Single brooded.

FOOD.—Obtained on ground as well as in bushes ; insects (coleoptera, orthoptera, larvæ of lepidoptera, etc.). Also earthworms.

DISTRIBUTION.—*British Isles*.—Five. One near Brighton (Sussex), Sept. 16, 1854 (W. Borrer, *Zool.*, 1854, p. 4511). One Start (Devon) Sept. 25, 1859 (G. R. Gray, *Ann. & Mag. Nat. Hist.*, ser. 3, Vol. iv, p. 399.) One Slapton (Devon) Oct. 12, 1876 (H. Nicholls, *Zool.*, 1876, p. 5179). One Brede (Sussex) Sept. 20, 1913 (H. W. Ford-Lindsay, *Brit. B.*, vii, p. 172). One Old Head of Kinsale (Cork) Sept., 1876 (R. J. Ussher, *Irish Nat.*, 1899, p. 52).

DISTRIBUTION.—*Abroad*.—Southern Spain and Portugal, north Africa, south Syria. Stray birds have been observed in Italy. Appears in winter or on passage in oases of Great Desert.

162. *Agrobates galactotes syriacus* (Hempr. & Ehr.)—THE BROWN-BACKED WARBLER.

CURRUCA GALACTODES VAR. SYRIACA Hemprich and Ehrenberg, *Symb. Phys.*, fol. bb (1833—Syria [Beirut]).

Aëdon familiaris, J. B. Nichols, *Brit. B.*, i, p. 257 ; A. F. Griffith, *Bull. B.O.C.*, xxvii, p. 29. *A. g. syriacus*, Witherby, *Brit. B.*, iv, p. 310.

DESCRIPTION.—*Adult male and female*.—Like *A. g. galactotes* but crown, mantle, scapulars and back brown not chestnut and darker than in *A. g. galactotes* ; rump and upper tail-coverts chestnut as in *A. g. galactotes* and contrasting strikingly with rest of upper-parts ; eye-stripe rather purer white ; under-parts greyer not sandy-coloured ; central tail-feathers with most of outer webs brown and tips of inner webs brown ; wing-feathers and wing-coverts darker brown than in *A. g. galactotes* and edgings and tips whiter.

Nestling and Juvenile.—(Not examined.)

Measurements and structure.—♂ wing 83–89 mm., tail 62–69, tarsus 25–27, bill from skull 17–20 (12 measured). ♀ wing 79–85, tail 58–65. Primaries : 1st 1–3 mm. longer or 1–2 shorter, than primary-coverts, 3rd and 4th longest, 2nd and 5th 1.5–2.5 mm. shorter, 6th 5–8 shorter ; 3rd and 4th emarginated outer webs. Other structure as *A. g. galactotes*.

BREEDING-HABITS.—Similar to those of Rufous Warbler, but nest is more frequently placed in a tree, especially in olive-groves, 4 to 6 ft. from the ground. *Eggs*.—Also similar in type, but on average slightly smaller. Average of 87 eggs, 21.7×16 mm. *Breeding-season*.—From May 18 to June 18 in Greece : mostly late in May or early in June. Single brooded.

FOOD.—Chiefly insects : coleoptera, orthoptera (locusts, grasshoppers, etc.). Also earthworms.

DISTRIBUTION.—*England*.—Four. Male, Hythe (Kent) July 15, 1907. Male, Ninfield (Sussex) May 13, 1910 (*ut supra*). Male, Westfield (Sussex) May 7, 1915 (H. W. Ford-Lindsay, *Brit. Birds*, ix, p. 155). Male, West St. Leonards (Sussex) June 8, 1918 (J. B. Nichols, *op. c.*, xii, p. 160).

DISTRIBUTION.—*Abroad*.—From south Herzegovina and south Dalmatia throughout Greece and Ionian Islands to Asia Minor and north Syria. Winters in south Arabia, Somaliland, and east Africa (Mombasa). Replaced in south Caucasus, Persia, Mesopotamia, Transcaspia, Turkestan, Afghanistan, and Baluchistan by *A. g. familiaris*, which winters in north-west India, Sind, and Rajputana, and has been recorded once from Heligoland.

Genus TURDUS L.

TURDUS Linnaeus, *Syst. Nat.*, ed. x, i, p. 168 (1758—Type by subsequent designation, Gray 1840: *T. viscivorus*).

Middle-sized, ten-primaried Oscines. Bills more or less shorter than head, culmen distinctly curved, cutting edge of upper mandible distinctly notched anterior to tip. Rictal and nasal bristles distinct. Nostril oval or roundish, partly covered by a membrane and in varying degree by frontal feathering. Wings long and pointed, longest primaries much exceeding secondaries. 1st primary generally much shorter than primary-coverts, sometimes (*T. merula*) nearly as long. Tail usually with 12, but some (not all) subspecies of *T. dauma* with 14 rectrices. Feet strong, tarsus in front with sheath, only subdivided at base. Nests deep open cups, eggs spotted. Almost cosmopolitan. By some ornithologists split up into number of genera.

Key to adults of species of genus TURDUS.

- | | | |
|-----|--|---------------------------------|
| 1 { | Tail with 14 rectrices, strongly rounded . . . | <i>T. dauma aureus</i> , p. 390 |
| | Tail with 12 rectrices, square or as good as square | 2 |
| 2 { | 3rd to 6th primaries with outer webs sinuated (attenuated before middle) | <i>T. merula</i> , p. 418 |
| | 3rd to 5th primaries with outer webs sinuated 3 | |
| 3 { | Under wing-coverts white | 4 |
| | Under wing-coverts not white | 5 |
| 4 { | Tail-feathers with some white at tips, upper-parts greyish-brown | <i>T. viscivorus</i> , p. 395 |
| | Tail-feathers uniform, <i>i.e.</i> , without white at tips, rump grey, interscapular region chestnut . . . | <i>T. pilaris</i> , p. 392 |

- | | | |
|-----|--|-------------------------------|
| 5 { | Abdomen black or blackish, with or without light edges to feathers | <i>T. torquatus</i> , p. 413 |
| | Abdomen partially or entirely white | 6 |
| 6 { | Abdomen uniform white throughout, feathers of throat black or black with white edges | <i>T. ruficollis</i> , p. 410 |
| | Abdomen, at least partially, spotted, throat white or buff | 7 |
| 7 { | Inner webs of quills and outer ones of secondaries partially rufous | <i>T. eunomus</i> , p. 407 |
| | No rufous on wing-feathers. | 8 |
| 8 { | Under wing-coverts and sides of breast bright rufous | <i>T. musicus</i> , p. 404 |
| | Under wing-coverts rusty-yellow, no rufous on sides. | <i>T. philomelus</i> , p. 399 |

TURDUS DAUMA

163. *Turdus dauma aureus* Hol.*—WHITE'S THRUSH.

TURDUS AUREUS Holandre, Fauna dép. Moselle, in Ann. Moselle, p. 60 (1825—Metz).

Turdus Whitei Eyton, Rarer Brit. B., p. 92 (1836—Christchurch).

Turdus varius Pallas, Yarrell, I, p. 251; Saunders, p. 11.

T. d. aureus Hartert, Brit. B., IV, p. 129.

DESCRIPTION (Plate 14).—*Adult male and female. Winter.*—Whole upper-parts yellowish olive-brown, each feather with a broad black tip and an olive-yellow subterminal band; lores whitish with faint black tips; feathers of sides of head and under-parts white with black tips and yellow subterminal bands; feathers of sides of breast olive-brown, those of centre of belly almost pure white with only a few narrow black tips; chin and upper-throat and under tail-coverts white, often tinged buffish, feathers with black tips (sometimes almost absent, sometimes well marked); greater under wing-coverts with basal half black and distal half pure white, axillaries with basal half pure white and distal half black, forming together a broad black band under wing; tail: two central pairs olive-brown, next three pairs brown-black with olive-brown bases and whitish tips, two outer pairs with larger white tips and with brown-black bases and some olive-brown on distal portions; primaries and secondaries dark brown with a broad yellowish-white band across middle of inner webs, usually commencing on 3rd primary, outer webs mostly yellowish-olive, but with dark brown encroaching on it in an irregular line and at tip, innermost secondaries with olive-yellow tips; primary-coverts brown-black at tip and base, middle of outer webs olive-yellow and of inner webs whitish; greater wing-coverts brown-black with broad olive-brown

* Holandre's name is two years earlier than Pallas's *varius*.—E.H.

fringes to outer webs and olive-yellow tips ; median wing-coverts mostly brown-black with pale, large olive-yellow tips ; lesser wing-coverts olive-brown with very narrow blackish tips and pale subterminal spots. This plumage appears to be acquired by complete moult in Aug.-Sept., but no adults in actual moult have been examined. *Summer*.—A moult of the body-feathers takes place in March and April, at all events in some examples, but insufficient material is available to determine precise extent and regularity of moult. Abrasion both of winter feathers before this moult and of new feathers later in summer makes upper-parts, wings and central tail-feathers much greyer and less olive-brown.

Nestling.—(Not examined.)

Juvenile.—Much like adult but with subterminal bands of feathers of upper-parts more yellowish and not so olivaceous ; chin and upper-throat and under tail-coverts buffish-white without any black tips ; rest of under-parts with narrower black tips and deeper orange-buff subterminal bands than in adult ; two central pairs of tail-feathers with yellowish-buff tips.

First winter.—Like adults except for tips to central tail-feathers, which are as in juvenile. The juvenile body-feathers, lesser, median and inner greater wing-coverts are moulted in Aug.-Sept., but not rest of greater coverts nor primary-coverts, wing- or tail-feathers.

Measurements and structure.—♂ wing 155–164 mm., tail 95–108, tarsus 33–38, bill from skull 28–31 (12 measured). ♀ wing 154–167. Primaries : 1st 4–14 mm. shorter than primary-coverts, 3rd longest, 4th sometimes equal but usually 1–2 mm. shorter, 2nd 5–8 shorter, 5th 8–10 shorter, 6th 20–25 shorter ; 3rd and 4th clearly, and 5th indistinctly, emarginated outer webs. Secondaries slightly shorter than 10th primary, tips fairly square. Tail rounded laterally, outermost feathers being 10–15 mm. shorter than longest, 14 feathers, tips ending in fine point, especially in juvenile. Bill strong, culmen slightly curved, especially at tip, upper mandible larger than lower, with a notch on cutting edges near tip. Nostrils partly covered by membrane but not by feathers. A good many fairly strong rectal and nasal bristles. Frequently filoplumes on nape numerous and projecting beyond feathers.

Soft parts.—Bill brown, with base of lower mandible yellowish ; legs and feet pale yellowish-brown ; iris brown.

CHARACTERS AND ALLIED FORMS.—*T. d. major* (Loo Choo Islands) has only 12 tail-feathers and is larger ; *T. d. horsfieldi* (Java, Lombok) has 14 tail-feathers but is much smaller ; *T. d. dauma* (Himalayas) has only 12 tail-feathers and is smaller than *T. d. aureus* ; *T. d. socius* (Ta-tsien-lu, China) is said to be darker ; *T. d. affinis* and *angustirostris* (both Siam) require further confirmation. Fourteen tail-feathers, golden and black spotted appearance of upper-parts and broad black band under wing distinguish White's from other British Thrushes.

FIELD-CHARACTERS.—Very shy, usually haunting thick forest-growth, where it is extremely difficult to observe. Apparently a very silent bird, but is said by Japanese to possess a melancholy song which is usually heard in overcast weather. Movements and general appearance suggestive of Mistle-Thrush but at close range crescentic markings distinctly visible. (Collingwood Ingram.)

BREEDING-HABITS.—Haunts deep forest with heavy undergrowth. *Nest.*—Usually placed in fork of tree, about 12 to 20 ft. up, built chiefly of moss with a few twigs and thickly lined pine-needles. *Eggs.*—4-5, occasionally 3, greenish-blue ground almost obscured by fine reddish freckles, but generally one egg in each set shows much more ground-colour and fewer and bolder markings. Average size of 90 eggs, 32.6×23.9 mm. *Breeding-season.*—From mid-May onward to late July in Japan. Probably double-brooded.

FOOD.—Said to consist chiefly of insects, but Swinhoe says it eats banyan berries in spring in China. Small beetles and fibrous matter in a Norfolk specimen (T. E. Gunn).

DISTRIBUTION.—*British Isles.*—Vagrant. Since the first, near Christchurch (Hants.), Jan. 24, 1828, authentic examples have been recorded, almost all in winter, from Cornwall, Devon, Somerset, Gloucester, Salop, Warwick, Sussex (four), Suffolk, Norfolk, Yorks. (five), Durham, Northumberland. In Scotland two, Hardacres (Berwick), Dec. 1878, Aberdeen, Oct. 1913. In Ireland three, near Bandon (Cork), Ballymahon (Longford), and Westport (Mayo).

DISTRIBUTION.—*Abroad.*—East Siberia and Japan. Winters in south China and Formosa. Occasionally observed in Philippine Islands, in Pegu, Assam, west Siberia, and various parts of Europe from Urals and Scandinavia to Belgium, France, and Italy. Replaced by other subspecies on Loo Choo (Riu Kiu) Islands, in mountains of Java and Lombok, Himalayas (*T. dauma dauma*), south India, Sechuan and Siam, the last requiring confirmation.

[NOTE.—An example of the SIBERIAN THRUSH, *Turdus sibiricus sibiricus* Pal., is said to have been shot in Surrey (winter 1860-61) and another to have been picked up at Bonchurch, Isle of Wight (winter 1874), but the evidence is not considered sufficient (*cf.* Saunders, p. 12). The adult male is dark slate-colour with a pure white eye-stripe and white centre of belly and tips of under tail- and wing-coverts and tail-feathers, while the female is dark brown above and whitish (feathers tipped brown) below, axillaries white with blackish tips. It inhabits Siberia, wintering in eastern India, Andamans, south China and Greater Sunda Islands. Has been obtained in Germany, Belgium, Holland, France, and Bulgaria.]

TURDUS PILARIS

164. *Turdus pilaris* L.—THE FIELDFARE.

TURDUS PILARIS Linnæus, Syst. Nat., ed. x, i, p. 168 (1758—Europe. Restricted typical locality: Sweden).

Turdus pilaris Linnæus, Yarrell, i, p. 272; Saunders, p. 7.



(2-5THS NATURAL SIZE.)

1, White's Thrush (*Turdus d. aureus*). 2, ♂ Adult Fieldfare (*T. pilaris*). 3, British Song-Thrush (*T. ph. clarkii*). 4, Hebridean Song-Thrush (*T. ph. hebridensis*). 5, ♂ Adult summer, 6, Juvenile, Rock-Thrush (*Monticola saxatilis*).

DESCRIPTION (Plate 14).—*Adult male. Winter.*—Fore-head and crown bluish-grey slightly tinged brownish and each feather with brown-black centre varying in size ; nape, hind-neck, rump and upper tail-coverts same, but without black centres and feathers of rump usually with whitish shaft-streaks ; mantle and scapulars dark chestnut-brown, centres of feathers blackish and tips paler and greyish ; indistinct line from nostrils, over and behind eye greyish-white to creamy-buff ; lores and under eye black ; ear-coverts as nape ; chin, throat and centre of breast warm buff with brown-black streaks varying considerably in number, size and shape ; feathers of sides of breast and flanks with brown-black centres, bordered with rusty-buff and tipped white ; lower-breast white, tinged buff ; belly white, some feathers with concealed dark markings ; under tail-coverts with dark brownish-grey bases and edgings and long white tips and centres ; axillaries and under wing-coverts white ; tail brown-black (with obsolete dark bars observable in certain lights), outer webs fringed greyish at base, outer pair with narrow whitish margin at tip of inner webs ; primaries brown-black, inner web greyish at base, outer webs of outer feathers fringed grey, those of inner feathers browner ; secondaries with outer webs fringed more broadly with more chestnut-brown but greyish at tips ; primary-coverts as outer primaries ; greater and median wing-coverts with inner webs dark brown and outer webs mostly chestnut-brown with pale grey tips ; lesser wing-coverts with less chestnut, more grey and dark centres. This plumage is acquired by complete moult in July–Sept. *Summer.*—No moult. Abrasion makes blackish centres of feathers of crown conspicuous, nape and rump purer grey, mantle rather paler, underparts less buff and dark markings more conspicuous.

Adult female. Winter.—Like adult male, but crown, nape and rump more washed with brownish, and feathers of crown with smaller black centres ; mantle, scapulars and edgings of secondaries and wing-coverts paler, not such rich chestnut-brown ; throat and breast usually paler, not such deep buff ; dark markings on flanks browner and not so solid. Same moult as male. *Summer.*—Same differences as winter, but head, nape and rump purer grey.

Nestling.—(Not examined.)

Juvenile. Male and female.—Crown and nape greyish-brown, feathers with whitish shaft-streaks ; rump same but rather greyer ; upper tail-coverts same but with pale tips ; mantle and scapulars brown, feathers with whitish to pale buff centres (varying in size) and with blackish tips ; line from nostrils, over and behind eye creamy-buff ; lores and line under eye blackish ; ear-coverts pale buff marked with grey and black ; chin and centre of upper-throat pale buff, sides and lower-throat and breast rather deeper buff, each feather tipped with roundish black-brown spot ; rest of underparts white spotted same but with few spots in centre of belly

(N.B.—Under-parts thus with much more spotted appearance than in adults); under tail-coverts and axillaries as adult; tail as adult; wing-feathers as adult, but outer edgings of primaries usually browner and of secondaries paler and less chestnut; greater wing-coverts as adult, but outer webs paler and browner (less chestnut) and feathers with whitish tips and inner ones with whitish shaft-lines at tip; median and lesser coverts brown with buffish-white tips and buff shaft-streaks.

First winter and summer. Male.—Like adult, but nape and rump usually more tinged with brownish and not so pure grey; greater coverts with less chestnut edgings, and whitish tips and usually one or two inner ones with white shaft-streak; wing-feathers differing slightly as in juvenile. The juvenile body-plumage, median and lesser, and varying number of greater wing-coverts are moulted in Aug.-Sept. but not wing- and tail-feathers nor outer greater coverts. *Female.*—White tips and shaft-streaks of greater coverts distinguish it from adult female, the other differences observable in male being scarcely noticeable.

Measurements and structure.—♂ wing 140–153 mm., tail 100–110, tarsus 31–34, bill from skull 23–24.5 (12 measured). ♀ wing 135–148. Primaries: 1st about half primary-coverts, 3rd longest, 4th sometimes equal usually 1–2 mm. shorter, 2nd 5–10 shorter, 5th 5–10 shorter, 6th 20–25 shorter; 3rd to 5th emarginated outer webs. Outermost tail-feathers about 5 mm. shorter than rest, 12 feathers. Other structure as White's Thrush.

Soft parts.—Bill in winter orange-yellow with tips of both mandibles black-brown and most of upper mandible clouded same; in summer all yellow in male, but upper mandible with some brown in female; legs and feet brown; iris dark brown.

CHARACTERS.—No subspecies. General coloration of upper-parts together with white axillaries and large size distinguish it from other Thrushes.

FIELD-CHARACTERS.—Frequents fields and open country autumn to spring. Essentially gregarious. Feeds mostly on ground, in loose flocks, all birds facing in same direction, but eats hedgerow fruit in hard weather. Slate-grey neck and rump with chestnut-brown back and brown wings and tail distinctive. In flight white axillaries and under-wing conspicuous, as in Mistle-Thrush, but build slighter and tail proportionately longer. Characteristic harsh "tsak, tsak, tsak," uttered when birds are disturbed and as flocks pass from place to place. Song poor.

BREEDING-HABITS.—Nests usually in colonies, in woods of birch, alder or fir, but also at times in gardens; occasionally on wood-stacks, rocks or huts and even on ground. *Nest.*—Built of grasses with layer of mud beneath inner lining, occasionally a few twigs or a

little moss in foundation. *Eggs*.—Usually 5-6, sometimes only 4, while 7 and 8 are on record. Variable; many like Blackbird's, but some have bright blue ground and others are boldly blotched or capped with red-brown. Average of 100 eggs, 28.8×20.9 mm. *Breeding-season*.—In April in Poland, but May to July in Scandinavia; double-brooded. *Incubation*.—No reliable data; probably chiefly by hen.

Food.—Varied, both animal and vegetable. Mollusca (slugs and small land-shells); annelida (earthworms); insects (coleoptera, diptera (larvæ), etc.). Also many kinds of berries (hawthorn, holly, mountain ash, yew, rowan, juniper, dog-rose, pyracanthus, etc.) and swedes attacked, especially in hard weather. Grain also taken.

DISTRIBUTION.—*British Isles*.—Winter-visitor and passage-migrant. Generally distributed.

MIGRATIONS.—*British Isles*.—From Shetlands to Wash small numbers arrive last week Sept. and early Oct. (early dates Sept. 7 Antrim, 16 Kent, 18 Yorks.), followed by large immigrations until third week Nov., and spread west and south-west to winter-quarters. Smaller streams, probably after an overland flight, pass down west coast Scotland and through the isles, the latter reaching winter-quarters in Ireland. Some of those passing down either coast are passage-migrants, and leave the country from western half of southern seaboard. Southward "weather-movements" occur in winter. Passage-migrants arrive on south coast England from late March through April to early May. These join our winter-visitors, which leave much as they arrived throughout April to early, and sometimes mid, May, and even the end of the month in the northern isles (late dates Northants., May 23, Perthshire, June 10, 1915; Cumberland, July 11, 1918, Leicestershire, July 29, 1864).

DISTRIBUTION.—*Abroad*.—North Europe and north Asia, east to Lena, south to parts of Germany, Austria and Hungary, wintering in central and south Europe, in small numbers to north-west Africa and north-west India. Casual Iceland, Jan Mayen, Madeira and Canaries.

TURDUS VISCIVORUS

165. *Turdus viscivorus viscivorus* L.—THE MISTLE-THRUSH.

TURDUS VISCIVORUS Linnæus, Syst. Nat., ed. x, i, p. 168 (1758—Europe. Restricted typical locality: England; cf. Hartert, Vög. pal. Fauna, i, p. 647, note).

Turdus viscivorus Linnæus, Yarrell, i, p. 258; Saunders, p. 1.

DESCRIPTION (Plate 15).—*Adult male and female*. *Winter*.—Forehead, crown, nape, mantle and scapulars brown to greyish-brown,

each feather with a slightly darker shaft-streak ; back, rump and upper tail-coverts same but feathers edged with yellowish-buff and most of upper tail-coverts tipped greyish-white ; lores and feathers round eyes greyish-white ; ear-coverts pale buff to whitish with dull brown tips and edges ; chin and centre of throat buffish-white with a few small black-brown wedge-shaped spots ; sides of throat and neck rather buffer, with more numerous and larger spots ; upper-breast with very large wedge-shaped spots varying in size and rest of under-parts with rounder spots, upper-breast and flanks strongly washed yellowish-buff, centre of breast and belly whiter and latter with much smaller spots ; under tail-coverts with brown bases and edges and buffish-white tips and shaft-streaks ; axillaries white with sometimes a dark spot at tip of one or two feathers ; under wing-coverts white ; tail-feathers greyish-brown narrowly edged greyish-buff on outer webs and greyish-white on inner webs, outermost pair with white tips and varying amount of white or greyish-white on inner webs, next two pairs with much smaller white tips on inner webs ; primaries dark brown with outer webs narrowly edged greyish-buff, becoming white towards tips, basal portion of inner webs white ; secondaries same but outer webs more widely fringed creamy-buff and innermost feathers with white or whitish tips ; primary-coverts dark brown, narrowly edged creamy or greyish-white ; greater coverts rather paler brown with outer webs more widely fringed buffish-cream to greyish-white ; median coverts brown with buffish-cream to greyish-white tips ; lesser coverts uniform brown. This plumage is acquired by complete moult Aug.-Oct. (N.B.—Amount of buff on under-parts and greyish tinge on upper-parts as well as colour of edgings of wing-feathers and wing-coverts varies individually, even in fresh plumage.) *Summer*.—No true moult, but a few body-feathers are frequently renewed Jan.-March. Abrasion makes upper-parts greyer-brown and under-parts less buff, and edgings of wing-feathers and coverts wear off or become whiter.

Nestling.—Down, buffish-white, plentiful and fairly long. Distribution, inner and occasionally outer supra-orbital, occipital, spinal, humeral and ulnar. Mouth, inside bright yellow, no tongue-spots ; externally flanges pale yellow.

Juvenile.—Whole crown, nape, back and rump usually buffish-brown but sometimes greyish-brown or tinged olivaceous, each feather with a darker tip and creamy-buff to whitish centre ; mantle and scapulars darker with larger and more conspicuous pale centres ; upper tail-coverts like rump but with less conspicuous pale centres and pale tips ; under-parts much as adult but chin and centre of throat usually with no spots at all and spots on rest of under-parts rather smaller ; tail as adult ; primaries, secondaries, primary and greater coverts as adult but edgings of outer webs more yellowish-buff and inner greater coverts with wedge-shaped

buff tips extending almost to the base of innermost feathers ; median and lesser coverts like innermost greater coverts.

First winter and summer.—Like adults but usually with a few feathers on upper-parts, especially on rump, scapulars or wing-coverts, with pale shaft-streaks ; usually rather deeper buff on breast, sides and flanks than adults. The juvenile body-plumage, lesser, median and inner greater wing-coverts are moulted May-Aug. but not outer greater coverts, primary-coverts nor wing- and tail-feathers.

Measurements and structure.—♂ wing 145-157 (one 162) mm., tail 100-117, tarsus 30-35, bill from skull 22-25 (12 measured). ♀ wing 145-157. Primaries : 1st 8-15 mm. shorter than primary-coverts, 3rd and 4th longest, 2nd 4-8 shorter, 5th 3-7 shorter, 6th 15-22 shorter ; 3rd to 5th clearly and 6th slightly emarginated outer webs. Outermost tail-feathers about 5 mm. shorter than rest, 12 feathers. Other structure as White's Thrush.

Soft parts.—Bill dark horn-brown, with base of lower mandible yellowish ; legs and feet yellowish-brown ; iris brown.

CHARACTERS AND ALLIED FORMS.—*T. v. deichleri* (north-west Africa) is scarcely separable but has a slightly longer and finer bill and is frequently greyer on upper-parts and less buff on under-parts ; *T. v. bonapartei* (Turkestan, Himalayas) is larger and upper-parts are paler and considerably greyer. White under-wing distinguishes it at once from White's and Song-Thrushes.

FIELD-CHARACTERS.—Larger and greyer than Song-Thrush, with larger and fan-shaped breast-spots. White tips to outer tail-feathers show in flight at close quarters. White axillaries and under-wing distinguish from other Thrushes except Fieldfare, from which differs in more undulating flight. Juveniles sometimes mistaken for White's Thrush. Gregarious to some extent in autumn ; feeds much on hedgerow fruit and berries of mountain ash and juniper at that season. Intolerant of competition by other Thrushes for such food, and fearless in defence of nest, boldly attacking Hawks, Crows and Magpies. Song loud and wild, a single phrase repeated again and again, lacks variety of Song-Thrush's. Call-note reiterated "tuc." Alarm-note a harsh, grating "sgrade."

BREEDING-HABITS.—Usually builds in fork, or sometimes out on bough, of a tree, often at considerable height above ground, but also exceptionally in hedgerows or low bushes, and near the coast, in recesses of rocks. Has also nested on buildings and holes in walls. *Nest.*—Built of bents, roots, moss, etc., with earth to solidify it, lined dry grasses, and sometimes decorated with lichens, bits of wool, linen, rags, etc. *Eggs.*—Normally 4, occasionally 5, and 6 on record. Colour ranges from tawny-cream to greenish-blue,

blotched and spotted with sienna-brown and lilac shell-marks, while in a few cases markings are almost absent. Average of 100 British eggs, 30.7×22.8 mm. *Breeding-season*.—Begins February, but many do not breed till late March or early April. *Incubation*.—15th day in incubator (Evans); 14 days (N. M. Richardson), by hen alone (Richardson), though Naumann says male relieves her at mid-day. Two broods frequently reared. *Fledging-period*.—13-14 days (Brock); 15-16 (Richardson).

FOOD.—Largely fruit and berries, but also includes mollusca (slugs); annelida (worms); insects (coleoptera and their larvæ, lepidoptera (larvæ), hymenoptera (ants), and larvæ of diptera). Also spiders, and known to kill young Song-Thrush, Blackbird and slow-worm. Besides fruit (cherries, apples, plums and blackcurrants), many kinds of berries or seeds (yew, ash, maple, rowan, juniper, honey-suckle, hawthorn, rose, holly, ivy, bird-cherry, mistletoe, etc.).

DISTRIBUTION.—*British Isles*.—Resident. Generally distributed except in higher mountains and treeless districts, and only thinly distributed in north-west Scotland, breeds in most I. Hebrides, but rare vagrant in O. Hebrides except Stornoway (Lewis), where bred 1906 and possibly since 1902; rare Orkneys, but has bred; scarce passage-migrant Fair Isle, and rare vagrant Shetlands. First seen in Ireland about 1800; has been spreading ever since.

MIGRATIONS.—*British Isles*.—Many of our breeding-birds and their young move southwards from late August onwards, some apparently wintering in southern counties, while others cross to Ireland and others cross overseas from early Oct. onwards. Passage-migrants and winter-visitors arrive in northern isles and on east coast and pass down latter and west coast (Argyll to Cornwall) mid-Sept. to fourth week Nov.; some perhaps pass to Ireland, others remain as winter-visitors, while others leave by south coast, mid-Oct. to end Nov. Winter weather-movements recorded south, east and west coasts England and Wales in most years up to mid-Feb. From mid-Feb. to early April return immigration on south coast, with passage-movements in reverse direction by same routes as in autumn (but little evidence as yet from east coast) up to May 12 in northern isles, but hitherto not recorded elsewhere after first week April.

DISTRIBUTION.—*Abroad*.—North and central and mountains of south Europe, east to Ural and west Siberia. Winters in Mediterranean countries. Replaced in north-west Africa and central Asia and perhaps western Russia and west Mediterranean isles, by allied forms.

TURDUS PHILOMELUS *

166. *Turdus philomelus philomelus* Brehm — THE CONTINENTAL SONG-THRUSH.

TURDUS PHILOMELOS Brehm, Handb. Naturg. Vög. Deutschl., p. 382 (1831—Middle Germany).

Turdus musicus (non Linnæus, 1758 !), Yarrell, I, p. 264 (part); Saunders, p. 3 (part).

Turdus philomelos, Hartert, Brit. B., IV, p. 131.

DESCRIPTION.—*Adult male and female. Winter.*—Like *T. ph. clarkei*, but nape, mantle and scapulars paler, somewhat greyer and not of so reddish a tinge; rump and upper tail-coverts greyer and more olive; buff of under-parts paler and not so extensive, chin and upper throat being usually whitish or very pale buff and white of belly extending farther up breast. Moults as in *T. ph. clarkei*. *Summer.*—Same differences, but more marked, upper-parts becoming considerably greyer and under-parts whiter. (N.B.—There is considerable individual variation and a series should be compared.)

Nestling.—(Not examined.)

Juvenile.—Like that of *T. ph. clarkei*.

Measurements and structure and Soft parts.—As in *T. ph. clarkei*.

FIELD-CHARACTERS.—Can sometimes be distinguished in field from British Song-Thrush, especially when flying low, by greyer appearance, but usually no difference of which one can be certain is apparent. Rather shy. (H.F.W.)

BREEDING-HABITS.—Similar to those of British Song-Thrush, but less confiding and less frequently found near dwellings. *Eggs.*—Also similar, but average less in size. Average of 50, 27×20.2 mm.

FOOD.—Similar to that of British race. Grapes and olives taken on Continent.

DISTRIBUTION.—*Great Britain.*—Passage-migrant and winter-visitor, having been identified from late Sept. to early Nov. on coasts of Northumberland, Yorks., Lincs., Norfolk, and Suffolk, and Isle of May (Forth), in April at Dorset Light, and in March and April as well as autumn at St. Catherine's Light (Isle of Wight), also at Mull of Galloway Light and Tarbatness (Ross.). In Oct. and Dec. at Barnsness Lt. (Haddington). On both spring and autumn

* Generally called *Turdus musicus*, but Linnæus described, in 1758, under this name the Redwing! His diagnosis "alis subtus ferrugineis, linea superciliari albicante" leaves no doubt. The next oldest name for the Song-Thrush is *T. philomelos* Brehm, 1831.—E.H.

passage and a few in winter at Fair Isle (Shetlands). Little so far recorded of this form from identified examples (*cf. Brit. B.*, iv, pp. 246, 291), but there cannot be much doubt that it arrives annually with the first Redwings from late Sept. throughout Oct., followed by stragglers to 3rd week Nov. on east coast from extreme south of Shetlands to Norfolk. Many afterwards appear to proceed along coasts to winter-quarters in Ireland and the Continent, others remain as winter-residents, sometimes performing further migratory journeys along same routes as their forerunners, when compelled by unfavourable weather conditions. In spring this form occurs with *T. ph. clarkei* amongst returning migrants on south coast in late March and during April, and appears to continue up east coast, and finally depart by route followed in autumn.

DISTRIBUTION.—*Abroad.*—Europe generally, west Siberia to Lake Baikal, but absent from Spain south of Cantabrian Mountains, south Italy, and Greece. Wintering in south Europe and north Africa in east as far south as Suakin and Khartum. Casual Madeira, winter-visitor Canaries.

167. *Turdus philomelos clarkei* Hart.—THE BRITISH SONG-THRUSH.

TURDUS PHILOMELOS CLARKEI Hartert, Bull. B.O.C., xxiii, p. 54 (1909—Great Britain); *id.*, *Brit. B.*, iv, p. 131.

Turdus musicus Linnæus, Yarrell, i, p. 264 (part); Saunders, p. 3 (part).

DESCRIPTION (Plates 14 and 15).—*Adult male and female. Winter.*—Crown, nape, mantle and scapulars warm brown with a reddish-brown tinge, especially on crown, feathers of crown with darkish centres and those of mantle usually with buffish concealed shaft-streaks; rump and upper tail-coverts more olive-brown; inconspicuous line from base of bill over eye pale cream-coloured; orbital ring whitish-cream; lores blackish-brown speckled cream; ear-coverts golden-buff heavily tipped and edged black-brown; chin pale buff to creamy-white, centre of upper-throat same, usually without spots; sides of throat thickly streaked black-brown each feather having a wedge-shaped dark mark at tip; lower-throat and upper-breast deeper yellowish-buff with larger and rather more rounded and fan-shaped black-brown spots; lower-breast and belly white, sparsely spotted but centre of belly without spots or with only a few small narrow ones; sides of breast and flanks olivaceous-buff and with browner spots; under tail-coverts creamy-white with buffish-brown bases; under wing-coverts and axillaries yellowish-buff; tail reddish-brown; primaries and secondaries black-brown, most of basal portion of inner webs buff, outer webs except at tips much as crown; primary-coverts as primaries with black-brown tips somewhat conspicuous; greater

coverts with brown outer webs tipped yellowish-buff and black-brown inner webs ; median coverts brown with large wedge-shaped yellowish-buff tips ; lesser coverts uniform brown. This plumage is acquired by complete moult Aug.-Sept., occasionally Oct. *Summer*.—No moult. Abrasion makes upper-parts (except crown) paler and slightly greyer, under-parts less buff and spots less intense, tips of wing-coverts paler.

Nestling.—Down, golden-buff, fairly long. Distribution, inner supra-orbital, spinal, humeral and ulnar (occasionally one or two tufts on outer supra-orbital tract). Mouth inside golden-yellow, no spots, externally flanges pale yellow.

Juvenile.—Like adult but feathers of upper-parts with dark tips, those of head with faint narrow buff mesial streaks, those of mantle with larger and conspicuous yellowish to pale buff centres and those of scapulars with still more conspicuous and larger mesial streaks ; rump and upper tail-coverts rather paler, sometimes washed with buff, but with few and inconspicuous pale streaks ; under-parts with smaller spots than in adult ; lower-breast and belly usually washed with buff ; flanks less olive than adult ; under tail-coverts pale buff ; tail- and wing-feathers as adult, but inner secondaries with very narrow yellowish-buff tips to outer webs ; greater wing-coverts with larger yellowish-buff tips than in adult and extending upwards as mesial streaks in varying number of inner feathers ; median and lesser coverts as inner greater coverts but with mesial streaks longer and more pronounced.

First winter and summer.—Like adults and only distinguishable when one or more of the inner juvenile greater coverts with a mesial streak remains unmoulted. The juvenile body-feathers, lesser and median wing-coverts and three to five innermost greater coverts are moulted July-Sept., occasionally Oct., but not wing- and tail-feathers, primary-coverts nor rest of greater coverts.

Measurements and structure.—♂ wing 111–121 mm., tail 77–90, tarsus 31–35, bill from skull 20–23 (12 measured). ♀ wing 111–121. Primaries : 1st 6–13 mm. shorter than primary-coverts (in juvenile and 1st winter 1st primary usually larger and longer than in adults), 3rd longest, 4th usually as long but sometimes 1–3 shorter, 2nd and 5th 3–6 shorter (but not often equal to each other), 6th 12–18 shorter ; 3rd to 5th emarginated outer webs. Outermost tail-feathers 3–5 mm. shorter than rest, 12 feathers. Other structure as in White's Thrush.

Soft parts.—Bill, upper mandible black-brown, lower with brown tip and flesh-yellow base ; legs and feet pale flesh ; iris dark umber.

CHARACTERS AND ALLIED FORMS.—For differences of *T. ph. philomelus* and *T. ph. hebridensis* see under those forms. Buff under wing-coverts together with spotted under-parts distinguish it from other species.

FIELD-CHARACTERS.—Differs from Mistle-Thrush by smaller size, olive-brown upper-parts, and smaller and rounder breast-spots. In flight axillaries and under-wing golden-brown. Not really gregarious except on migration, but fortuitous assemblages often feed in fields and open places with other Thrushes. Well-known song more varied than Mistle-Thrush's, characterized by different phrases each repeated three or four times. Call-note "seet," akin to but not so soft as Redwing's. Alarm-note "ptick," and if nest be threatened a harsh, chattering scream.

BREEDING-HABITS.—Nests in hedgerows, bushes, among ivy, occasionally on banks or in buildings, rarely on ground. *Nest.*—Well built of grasses, roots and at times moss, leaves and twigs, solidified with earth, and lined with smooth coating of rotten wood or dung mixed with saliva. *Eggs.*—Usually 4-5, rarely 6 and sometimes only 3, while 7, 8 and even 9 eggs in one nest have been recorded. Colour blue with greenish tinge, scantily spotted black or occasionally red-brown. Some sets have no markings, while a rare variety has white ground and red-brown markings. Average of 100 eggs, 28.7×20.9 mm. *Breeding-season.*—Many pairs nest in March, but breeding is not general till April, and as 2 or 3 broods are reared eggs may be found till August. *Incubation.*—13-14 days from last egg (Evans); 14 days in incubator; chiefly by hen, but male assists. *Fledging-period.*—13-14 days (Brock).

FOOD.—Feeds largely on mollusca (snails and slugs), earth-worms, and insects (coleoptera and larvæ, larvæ of diptera (*Tipula*, etc.), and lepidoptera, orthoptera, hymenoptera, etc.). Also spiders, millipedes and centipedes. Soft fruits, such as strawberry, cherry, currant and raspberry, are attacked, but only fallen apples or plums. Various berries and seeds (including rowan, birch, yew, holly, elder, etc.). Young fed chiefly on worms, slugs and insect larvæ. Beneficial on the whole.

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed, but rare in Shetlands and replaced in Outer Hebrides by *T. ph. hebridensis*, except at Stornoway (Lewis) where British form is stated to breed.

MIGRATIONS.—*British Isles.*—In late July and throughout August many, especially breeders in elevated districts, pass south gradually along all coasts. In Sept. and Oct. emigration more pronounced, and "rushes" occur in late Oct. Later on emigratory movements dependent on weather also occur. In Sept. and Oct. also a certain proportion of Irish birds emigrate. Many British Song-Thrushes winter in Ireland as well as farther south. Birds ringed as nestlings in England have been found in winter in France and Spain. The return migration begins on south coasts England and Ireland during

Feb., and lasts throughout March, and into April. Irish winter-residents return about late March.

DISTRIBUTION.—*Abroad.*—According to a note by Baron R. Snouckaert van Schauburg, the British form also inhabits Holland (*Orn. Monatsber.*, 1910, p. 158 ; *cf. Brit. B.*, v, p. 223).

168. *Turdus philomelus hebridensis* Clarke.—THE HEBRIDEAN SONG-THRUSH.

TURDUS MUSICUS HEBRIDENSIS Clarke, *Scott. Nat.*, p. 53 (1913—Barra Outer Hebrides).

DESCRIPTION (Plate 14).—*Adult male and female.*—Upper-parts darker, more earth-brown and less warm brown than in *T. ph. clarkei*, and rump and upper tail-coverts more tinged with grey, upper-parts thus more like *T. ph. philomelus* in tone but considerably darker and without olive tinge ; under-parts much more thickly spotted than in *T. ph. clarkei* or *T. ph. philomelus*, spots being larger and more intense black ; less buff on under-parts than in *T. ph. clarkei* ; flanks considerably darker and more smoky-brown than in either of the other races ; under wing-coverts and axillaries darker and richer and more cinnamon-buff ; tail, wings and wing-coverts darker than in either of the other races.

Nestling.—(Not examined.)

Juvenile.—Like that of *T. ph. clarkei* but upper-parts darker and pale mesial streaks consequently more accentuated ; under-parts with less buff than in *T. ph. clarkei*, spots scarcely larger but blacker ; flanks darker (more dingy) ; under wing-coverts darker and richer as in adults.

Measurements and structure.—As in *T. ph. clarkei*, but bill rather larger on average, viz. 22-24 mm. (12 measured).

Soft parts.—Apparently as in *T. ph. clarkei* but possibly legs and feet rather darker.

BREEDING-HABITS.—Owing to absence of trees nest is generally built among rocks and heather, like that of Ring-Ouzel. *Nest.*—Similar in construction to that of British Song-Thrush. *Eggs.*—Also similar.

FOOD.—In addition to worms, snails and insects, much of the food of this race is obtained on the shore, marine mollusca, up to size of whelk, being largely taken.

DISTRIBUTION.—*British Isles.*—Apparently confined to O. Hebrides, but may possibly be found to inhabit some I. Hebrides also. Has not yet been identified as migrant.

TURDUS MUSICUS*

169. *Turdus musicus* L.—THE REDWING.

TURDUS MUSICUS Linnæus, Syst. Nat., ed. x, i, p. 169 (1758—Europe. Restricted typical locality: Sweden).

Turdus iliacus Linnæus, Syst. Nat., ed. xii, i, p. 292 (1766—non Linnæus 1758! The latter is a hopeless mixture, while the name *musicus* is unassailable.)

Turdus iliacus Linnæus, Yarrell, i, p. 268; Saunders, p. 5.

Turdus musicus, Hartert, Brit. B., iv, p. 130.



The Redwing (*Turdus musicus*).

DESCRIPTION.—*Adult male and female. Winter.*—Whole upper-parts warm brown varying somewhat in tint and shade but usually rather darker than *Turdus ph. philomelus*, feathers of head with darker centres, rump and upper tail-coverts slightly more tinged with olivaceous than rest of upper-parts; broad and conspicuous stripe from nostrils, over and behind eye to back of skull pale buff to whitish-cream, rather more buff in front of eye; lores black-brown; ear-coverts dark brown with pale buff centres to some feathers; chin white to buffish-white, often without streaks, but sometimes with small black-brown and buff streaks; centre of throat same, but with broader and larger streaks; sides of throat with considerably heavier streaks; sides of neck buff to pale buff, feathers tipped dark brown; breast pale buff to white, feathers with wide pale brown mesial markings; sides of belly same but with

* As stated under *T. philomelus*, the name *musicus*, as first published, refers to the Redwing, and was only afterwards transferred to the Song-Thrush. The name *iliacus* was, in the first instance, an inextricable mixture of Song-Thrush, Redwing, and Mistle-Thrush, and could not be employed for the Redwing for this reason, as well as because the latter was already called *musicus*.—E.H.

smaller markings; centre of belly white; flanks rich chestnut; feathers towards belly streaked pale brown; under tail-coverts with pale brown bases and long buffish-white tips extending up centre of feathers in wedge-shape; axillaries and under wing-coverts pinkish-chestnut not so dark as flanks; tail dark brown with very narrow buffish-white edging at tip of inner webs of outer feathers; primaries and secondaries dark brown, inner webs with paler edgings and outer webs with more yellowish-brown edgings; primary-coverts same but with dark tips; greater coverts same but with more distinctly pale edgings to outer webs, varying from pale brown to rusty buffish-brown; median coverts dark brown with paler tips varying as outer edges of greater coverts; lesser coverts dark brown. This plumage is acquired by complete moult in Aug.-Sept. *Summer*.—No moult. Abrasion makes upper-parts somewhat greyer-brown and often dark centres of feathers of crown rather prominent; under-parts white with dark streaks more prominent and clearer

Nestling.—Down, pale buff. Distribution, inner supra-orbital, occipital, spinal, humeral and ulnar (from feathered skin).

Juvenile.—Whole head dark brown, feathers with blackish tips especially marked at sides of crown; mantle and scapulars same, but feathers with pale buff to whitish centres forming wide and prominent streaks on scapulars; rump and upper tail-coverts as mantle but paler brown and with fewer and smaller (or without) whitish centres; eye-stripe as in adult, but usually whiter; lores, ear-coverts and sides of neck and throat as adult but pale parts whiter and less buff; chin and centre of throat buffish-white; rest of under-parts pale buff to whitish-buff becoming white on belly, each feather with black-brown tip forming spots exactly as in juvenile Song-Thrush, spots smaller on lower belly and absent in centre; flanks buff with dark spots, some feathers in centre of flanks chestnut-buff; under tail-coverts buffish-white with pale brown bases and tips; axillaries and under wing-coverts pale buffish-chestnut; tail as adult; wing-feathers as adult but two innermost secondaries with distinct buffish-white tips to outer webs; greater coverts as adult but with buff tips extending upwards as mesial streaks in varying number of inner feathers (see Plate 15); median and lesser coverts dark brown with buff mesial streaks broadening at tips of median coverts.

First winter and summer.—As adult and only to be distinguished by white tips to innermost secondaries and pale buff tips to greater coverts. In summer these distinctive tips often become worn off. The juvenile body-feathers, lesser and median wing-coverts and varying number of inner greater coverts are moulted Aug.-Sept., but not wing- and tail-feathers, nor primary-coverts nor rest of greater coverts.

Measurements and structure.—♂ wing 113-122 mm., tail 76-85

tarsus 29-31, bill from skull 20-22 (12 measured). ♀ wing 113-119. Primaries: 1st 8-14 mm. shorter than primary-coverts, 3rd and 4th longest (4th occasionally 1 mm. shorter), 2nd 3-6 shorter, 5th 5-7 shorter, 6th 15-19 shorter; 3rd to 5th emarginated outer webs. Outermost tail-feathers very slightly shorter than rest, 12 feathers. Other structure as in White's Thrush.

Soft parts.—Bill black-brown, base of lower mandible yellow; legs and feet yellowish-brown; iris dark brown.

CHARACTERS.—No subspecies. Prominent eye-stripe, chestnut under-wing and want of chestnut on primaries and secondaries and upper wing-coverts (see *T. eunomus*) distinguish it from other British Thrushes.

FIELD-CHARACTERS.—Size of Song-Thrush but readily distinguished by broad buffish-white superciliary stripe and chestnut-red flanks and axillaries. Gregarious like Fieldfare, with which it often consorts. Call-note, a whispered "seep," often reveals migrating birds after dark in October and November and again in March and April. Real song, resembling that of Song-Thrush but sweeter, never heard in this country, but flocks babble in chorus in tree-tops on sunny days, a subdued warble punctuated by fluty "trui."

BREEDING-HABITS.—Though sometimes breeding close to Fieldfare colonies it is not sociable in breeding-habits, nesting in trees, bushes, stumps, or often on banks and broken ground. *Nest*.—Built of grasses, twigs and earth, lined grasses and sometimes a few lichens or bits of moss on outside. *Eggs*.—5-6, with greenish ground and usually fine markings of reddish-brown, considerably smaller than those of most *Turdidæ*. Average of 50 eggs, 25.8×18.7 mm. *Breeding-season*.—Most eggs are laid in June and July, but also in latter half May: double brooded. *Incubation*.—14-15 days, chiefly at any rate by female, but relieved by male about mid-day. *Fledging-period*.—Young leave nest in 11-14 days, before they are fully feathered.

FOOD.—Worms, mollusca (snails, including *Helix aspersa*, slugs, *Limax* and *Arion*, and lacustrine mollusca), insects (coleoptera, larvæ of lepidoptera and diptera, orthoptera, etc.), and on sea-shore, crustacea, etc. Also berries of hawthorn, yew, rowan, holly, *Vaccinium*, etc., and on Continent grapes in autumn.

DISTRIBUTION.—*British Isles*.—Winter-visitor and passage-migrant (mid-Sept. to April and mid-May. Early dates Aug. 11, Cumberland, Aug. 26, co. Down. Late dates June 1, Fair Isle, June 9, Northumberland, July 5, Cumberland). Generally distributed.

MIGRATIONS.—*British Isles*.—Similar to those of the Fieldfare.

DISTRIBUTION.—*Abroad*.—Breeding in north Europe and north Asia, including Iceland, south in Europe to north-east corner of

east Prussia, wintering in south Europe and north-west Africa, Persia and north-west India. Casual Greenland and Spitsbergen and Madeira ; occasional Canaries.

TURDUS EUNOMUS

170. *Turdus eunomus* Temm.—THE DUSKY THRUSH.

TURDUS EUNOMUS Temminck, Pl. col. 514 (1830—Japan).

*Turdus fuscatus** Pallas, Zoogr. Ross.-Asiat., I, p. 451, pl. XII (1827—Transbaikalia).

Turdus fuscatus = *T. dubius*, Musters, Bull. B.O.C., XVI, p. 45 ; Saunders, Brit. B., I, p. 5.



The Dusky Thrush (*Turdus eunomus*).

DESCRIPTION—*Adult male. Winter.*—Crown, nape, mantle and scapulars brown-black to dark brown, feathers edged dull buffish-grey with varying amount of rusty-brown or chestnut-brown on mantle and scapulars ; back and rump with more chestnut-brown and sometimes mostly chestnut with little black ; upper tail-coverts blacker ; broad and conspicuous stripe from nostrils, over and behind eye to back of skull dull white tinged cream ; lores and ear-coverts brown-black ; cheeks and sides of neck and sides of throat creamy-white, spotted brown-black ; chin and centre of throat same but without spots or with a few very small ones ; breast brown-black to rusty-black largely concealed by white fringes to feathers ; centre of breast and belly white ; sides

* *Turdus fuscatus* Pallas 1827 is preoccupied by *Turdus fuscatus* Vieillot, Hist. Nat. Ois. Amérique Sept., II, pl. 57 bis and text (1808—Porto Rico and Santo Domingo).

and flanks rusty-black, but occasionally dark rusty-brown ; under tail-coverts with long white tips and blackish bases freckled and marked with rusty-brown ; axillaries and under wing-coverts chestnut narrowly fringed whitish ; tail-feathers brown-black edged chestnut-brown at bases ; primaries brown-black with base and outer portion of rest of inner webs chestnut, most of outer webs at base same and a narrow edging of chestnut on rest of outer webs ; secondaries with broader chestnut edging to outer webs sometimes covering whole of web ; primary-coverts as primaries ; greater coverts mostly chestnut but with varying amount of brown-black especially at tip of inner webs, edges of outer webs at tip buffish-white ; median coverts chestnut with varying amount of black, tips buffish-white ; lesser coverts more brown-black and with very narrow buffish fringes. This plumage is acquired by complete moult Aug.-Oct. *Summer*.—No regular moult, but in some examples a number of body-feathers are renewed in March. Abrasion makes crown blacker and chestnut-brown on mantle and rump rather more marked, many spots wear completely off from feathers of throat and black of breast becomes almost uniform and flanks become darker by wearing off of white tips.

Adult female. Winter.—Upper-parts like adult male but crown and mantle usually brown rather than black (some examples indistinguishable in this respect), scapulars sometimes with pale chestnut-buff markings ; chin and centre of throat more spotted than adult male ; breast usually (but not always) browner ; flanks usually more rusty and less blackish, wing-feathers with only an edging of chestnut on outer webs, less extensive, paler and less rich than in male ; greater and median coverts also with considerably more black than adult male and edgings duller.

Nestling.—(Not examined, but feathered skin with whitish down on inner supra-orbital, occipital, spinal, humeral and ulnar tracts.)

Juvenile.—Crown brown-black, feathers with narrow and inconspicuous whitish-buff shaft-streaks ; nape same but feathers with whitish-buff subterminal bands ; feathers of mantle with wider and more rufous-buff shaft-streaks, those on sides of mantle and scapulars with most of their centres rufous-buff ; rump buffish-brown with paler centres and dark tips ; upper tail-coverts dark brown with pale shafts and narrow greyish tips ; eye-stripe as adult but much less distinct and spotted with black ; ear-coverts brown-black mottled with buff ; cheeks, sides of neck and sides of throat whitish-buff heavily spotted with brown-black ; chin and centre of throat same, less heavily spotted ; breast white in centre, buff at sides, thickly spotted brown-black, each feather having a roundish black tip ; flanks and sides of belly same but spots smaller ; centre of belly white ; under tail-coverts as adult but bases paler ; under wing-coverts and axillaries as adult but

paler; tail as adult; wing-feathers as adult but with considerably less chestnut on outer webs; greater coverts brown-black edged chestnut-brown, inner feathers with narrow chestnut-brown shaft-streaks; median and lesser wing-coverts brown-black with narrow pale buff tips and wide chestnut-brown shaft-streaks. Females appear to be browner on upper-parts and have duller edgings to wing-feathers and greater coverts.

First winter. Male.—Upper-parts and under-parts like adult female; amount and richness of chestnut on wing-feathers intermediate between adult female and male, tips of inner secondaries whitish; inner greater coverts with outer webs more mixed with blackish than in adult male, outer feathers with paler outer edges than in adult, some feathers often with pale shaft-mark at tip; median coverts usually brown-black and buff with pale mesial lines. Sometimes very difficult to distinguish from adult male. The juvenile body-feathers, lesser and median, and varying number of inner greater coverts are moulted Aug.-Oct., but not rest of greater coverts nor primary-coverts, wing- or tail-feathers.

First winter. Female.—Upper-parts browner than adult female, feathers of lower mantle and scapulars usually with pale chestnut-brown or buffish marks; breast more rusty-brown, not so black; flanks paler rusty-brown; sides of belly and flanks often with spots; wings and tail browner and edgings of wing-feathers and greater coverts more buffish, especially those of unmoulted outer greater coverts, which usually have clearly defined shaft-streaks; median and most lesser coverts with chestnut-brown shaft-streaks.

Measurements and structure.—♂ wing 128-137 mm., tail 87-96, tarsus 29-34, bill from skull 21-24 (12 measured). ♀ wing 122-128. Primaries: 1st 9-16 mm. shorter than primary-coverts, 3rd and 4th longest (4th rarely 1 mm. shorter), 2nd and 5th 4-7 shorter, 6th 15-21 shorter; 3rd to 5th emarginated outer webs. Outermost tail-feathers only very slightly shorter than rest, 12 feathers. Other structure as in White's Thrush.

Soft parts.—Bill brown-black, base of lower mandible and cutting edge orange; legs and feet brown; iris bright brown.

CHARACTERS.—No subspecies. *T. naumanni* is somewhat similar, but always has considerable amount of chestnut on tail-feathers, breast and flanks chestnut. Some examples are decidedly intermediate and the two species appear to interbreed. Black of breast, chestnut on wing-feathers, coverts and axillaries and conspicuous eye-stripe distinguish it from other British Thrushes.

BREEDING-HABITS.—Popham found nests in small trees standing alone, occasionally also on ground, but never more than 2 feet from it. *Eggs.*—4-5, occasionally 6, once 7, ranging through same variation as Blackbird and Fieldfare, markings being generally

fine. Average of 80 eggs, 27.8×20.6 mm. *Breeding-season*.—From May 10 to mid-June on the Amur. *Incubation*.—No details.

Food.—Worms, insects, seeds and berries, but details lacking.

DISTRIBUTION.—*England*.—One near Gunthorpe (Notts.), Oct. 13, 1905 (*ut supra*). A “party” (six obtained) in neighbourhood of Hollington and Crowhurst (Sussex), Jan. 25 to March 3, 1915 (H. W. Ford-Lindsay, *Brit. B.*, VIII, p. 267).

DISTRIBUTION.—*Abroad*.—Siberia, wintering in China, north-west India to Assam. Occasionally in Europe: Italy, south France, Russia, probably Germany, Heligoland (once), Belgium, Holland, Denmark, Norway.

TURDUS RUFICOLLIS

171. *Turdus ruficollis atrogularis* Temm.—THE BLACK-THROATED THRUSH.

TURDUS ATROGULARIS Temminck, Man. d'Orn., I, p. 169 (1820—Austria and Silesia).

Turdus atrigularis Temminck, Yarrell, I, p. 276; Saunders, p. 9.



The Black-throated Thrush (*Turdus r. atrogularis*). First winter male.

DESCRIPTION.—*Adult male*. *Winter*.—Whole crown and nape greyish-brown (sometimes olive-brown) feathers with blackish centres, in some individuals showing very little, but in others well marked and extending sometimes to upper mantle; rest of upper-parts uniform grey-brown (sometimes olive-brown); ear-coverts as mantle; lores, narrow line over eyes, cheeks, whole chin, throat and

upper-breast and sides of neck brown-black, each feather narrowly fringed with dull white to buffish-white; lower-breast and belly dull white, somewhat mottled or faintly streaked with smoke-brown; flanks smoke-grey; under tail-coverts with long white tips and dark brown bases and rust-coloured edgings; axillaries orange-buff mottled with brown and edged greyish-white, inner feathers usually paler than outer ones; tail-feathers dark brown with a rusty tinge on outer feathers; wing-feathers dark brown, inner webs edged buffish-grey, outer webs narrowly edged pale grey-brown, sometimes with buff tinge; primary- and greater coverts brown with outer webs narrowly edged as wing-feathers; median coverts as mantle but with pale tips; lesser coverts as mantle. This plumage is acquired by complete moult in July-Aug., perhaps occasionally Sept. *Summer*.—No moult. Abrasion gradually makes black of throat, breast, etc., more uniform by the wearing off of fringes of feathers.

Adult female. Winter.—Upper-parts as male but more olive-brown, never so grey-brown as some adult males; crown with very little black to centres of feathers; lores as male, but not so black; indistinct narrow line from nostrils over eye grey to buffish; ear-coverts as upper-parts; chin, throat and cheeks white with brown-black streaks; upper-breast brown-black tinged rusty, feathers with greyish to buffish fringes much wider than in adult male and sometimes dark centres of feathers restricted to a streak; rest of under-parts with more smoke-brown than in adult male; inner webs of outer tail-feathers more tinged with rust-colour than in adult male; fringes of wing-feathers more buffish-brown, not so grey. Moult as male. *Summer*.—Abrasion makes streaks on throat and black-brown parts of feathers of breast more prominent. There is considerable individual variation in amount of black-brown on breast.

Nestling.—(Not examined.)

Juvenile.—Like adult female but feathers of crown with faint narrow pale shaft-streaks and inconspicuous dark tips; feathers of mantle and scapulars with whitish-grey centres or mesial streaks and dark brown tips; back, rump and upper tail-coverts as adult but with greyish-white shaft-streaks and tips; lores dark brown; grey or pale buffish line over lores and eye, rather more marked than in adult female; ear-coverts brown, slightly speckled whitish; chin and upper-throat much as adult female; lower-throat and upper-breast buffish-white, each feather with a black-brown, roundish tip; lower-breast whiter with smaller spots; centre of belly white; flanks buffish-grey, feathers with dark brown tips; tail- and wing-feathers as adults, but two innermost secondaries with whitish-grey tips; primary-coverts as adult; greater coverts with small greyish-white tips confined to outer webs except in innermost feathers, which have a buffish-white wedge-shaped mark

at tip; median coverts with more pronounced greyish-white tips extending wedge-shaped up shafts; lesser coverts with whitish mesial streaks.

First winter. Male.—Somewhat intermediate between adult male and adult female. Upper-parts usually more brown as in female, but sometimes as grey-brown as some adult males; crown with less black as in adult female; black of lores and over eye with more grey fringes than in adult male; feathers of chin, throat and breast with wider white fringes, those of chin especially being often mostly white with only black streaks, but these parts with more black than in adult female; rest of plumage as adult male but unmoulted greater wing-coverts greyish-white at tips of outer webs. The juvenile body-feathers, lesser and median wing-coverts and varying number of inner greater coverts are moulted Aug.-Sept., but not wing- or tail-feathers, primary-coverts nor rest of greater wing-coverts. *Summer.*—Abrasion makes throat and breast darker owing to wearing off of white tips, but never so dark as in adult male.

First winter. Female.—Like adult female and difficult to distinguish except by paler and more prominent tips of greater wing-coverts; breast usually greyer and with less brown-black than in adult and lower-breast and sides usually with more smoke-brown and more streaked than adult female and much more so than in male. (N.B.—Occasional examples, irrespective of age and sex, are almost as rufous on the tail as examples of *T. r. ruficollis* and have also a considerable amount of rufous marks on throat and breast.)

Measurements and structure.—♂ wing 132–142 mm., tail 93–105, tarsus 32–34, bill from skull 21–24 (12 measured). ♀ wing 128–135. Primaries: 1st 10–15 mm. shorter than primary-coverts, 3rd and 4th longest (4th rarely 1–2 mm. shorter), 2nd 5–7 shorter, 5th 3–10 shorter (5th often equal to 2nd, but somewhat variable), 6th 16–22 shorter; 3rd to 5th emarginated outer webs. Outermost tail-feathers only slightly shorter than the rest, 12 feathers. Other structure as in White's Thrush.

Soft parts.—Bill dark brown with yellow base; legs and feet dark brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—In *T. r. ruficollis* (east Siberia) tail-feathers are rufous except for central pair, in male throat and breast are rufous instead of black, females are very similar to females of *T. r. atrogularis* except for rufous tail-feathers and usually rufous tinge on feathers of breast. From other British Thrushes *T. r. atrogularis* may be distinguished by black of throat and breast, rusty-buff of axillaries, uniform upper-parts, absence of rufous on upper side of wings, and absence of distinct eye-stripe.

BREEDING-HABITS.—Breeds in pine-forests, nesting in small trees, close to trunk, from 3 to 6 feet high. *Nest.*—Like Blackbird's, built of coarse, dry grass, lined mud, and inner layer of dry flat grasses. *Eggs.*—4–6, rather variable, some being of Blackbird type, but with

pronounced greenish ground and decided red-brown markings ; others said to approach type of Mistle-Thrush, but bluer ground. Average of 27 eggs, 29.1×21.3 mm. *Breeding-season*.—May and June. *Incubation*.—No details.

FOOD.—Probably worms, insects and berries. Przewalski records berries of *Viburnum*, *Crataegus* and *Eleagnus*, and Baker states that flocks haunt rice-fields in India.

DISTRIBUTION.—*Great Britain*.—Four. Male Lewes (Sussex), Dec. 23, 1868 (J. Gould, *Ibis*, 1869, p. 128). One (said to have been with another) near Perth, Feb., 1879 (H. M. Drummond-Hay, *t.c.*, 1889, p. 579). Male Newenden (Kent), Jan. 30, 1909 (T. Parkin, *Bull. B.O.C.*, xxiii, p. 57.) Male Wittersham (Kent), March 15, 1911 (N. F. Ticehurst, *Bull. B.O.C.*, xxvii, p. 94).

DISTRIBUTION.—*Abroad*.—West Siberia to Altai Mountains and, according to Sewertzow, in Turkestan. On passage or in winter in Turkestan, Afghanistan, Persia, Baluchistan, Himalayas, and north-west India. Once obtained in south Arabia, casual in Europe : Finland, Norway, Denmark, Germany, Austria, Italy, France, rarer in west. Replaced by *T. ruficollis ruficollis* in east Siberia.

[NOTE.—Several examples of the AMERICAN "ROBIN," *Turdus migratorius migratorius* L., which inhabits eastern and northern North America, and in winter migrates to Florida, Texas, Bermudas, and exceptionally Cuba, have been taken in the British Isles, but they had no doubt escaped from captivity. About 1910 an attempt at introduction was made near Guildford (Surrey).]

TURDUS TORQUATUS

172. *Turdus torquatus torquatus* L.—THE RING-OUZEL.

TURDUS TORQUATUS Linnaeus, Syst. Nat., ed. x, i, p. 170 (1758—Europe. Restricted typical locality : Sweden).

Turdus torquatus Linnaeus, Yarrell, i, p. 287 ; Saunders, p. 15.

DESCRIPTION (Plate 15).—*Adult male. Winter*.—Whole upper-parts brown-black, each feather fringed brownish-grey, those of head and nape with rather browner and less grey fringes than rest ; lores black ; ear-coverts and sides of neck as crown ; chin and upper-throat brown-black, each feather fringed greyish-white ; across lower-throat a broad gorget dull white, feathers tipped to variable extent with smoke-brown to dark brown ; rest of under-parts brown-black, each feather fringed white to greyish-white, under tail-coverts rather blacker, with whiter fringes and whitish shafts ; axillaries and under wing-coverts blackish-brown, fringed and mottled to variable extent with white ; tail brown-black, outer feathers very narrowly fringed greyish-white ; primaries and secondaries black-brown tinged greyish, outer webs narrowly margined dull greyish-white rather more widely on secondaries, inner margins of inner webs grey ; primary-coverts as primaries ;

greater coverts as secondaries ; median and lesser coverts same but with more whitish and broader fringes. This plumage is acquired by complete moult July-Sept. *Summer*.—No moult. Abrasion has considerable effect, whole plumage becoming browner and less black, pale fringes to feathers of upper-parts gradually wear off, so that by May upper-parts are usually uniform ; on under-parts whitish fringes mostly wear off except in centre of breast and belly and under tail-coverts, gorget becomes markedly white and very striking.

Adult female. Winter.—Browner than male ; fringes to feathers of upper-parts broader and browner ; fringes to feathers of chin and throat broader and whiter ; gorget narrower and duller, feathers with darker and broader fringes making gorget often inconspicuous ; usually with some under tail-coverts with whitish mesial streaks, not confined to shafts as is almost invariable in adult male. Moult as male. *Summer*.—Browner than male ; upper-parts not so uniform, fringes not wearing off entirely ; chin and throat still with small whitish fringes ; gorget much duller and less white than in male, and feathers still with remains of brown tips.

Nestling.—Down, pale buff. Distribution, inner supra-orbital, occipital, humeral, ulnar and spinal (from half-feathered skin).

Juvenile.—Upper-parts still browner than female with tips of feathers more rusty-brown, scapulars with white shaft-lines and varying numbers of feathers of mantle and nape with pale or whitish shaft-lines ; chin and centre of throat pale buff, feathers tipped black-brown ; rest of under-parts black-brown, feathers barred with buff or white but those of upper-breast frequently with whitish centres and buff tips and not barred (no trace of gorget) ; under tail-coverts with white shaft-lines and often wider mesial streaks and pale buff tips ; tail and wing-feathers browner and edgings of wing-feathers and greater coverts more cream-coloured, not so whitish ; inner greater coverts with small whitish mesial fleck at tip ; median and lesser wing-coverts dark brown edged rusty-brown and white to cream shaft-lines broadening at tip.

First winter. Male.—Like adult male and frequently difficult to distinguish, but sometimes gorget rather duller and feathers of chin with broader fringes and under tail-coverts often with whitish mesial streaks as in adult female ; outer (unmoulted) greater coverts browner than rest and usually one of the innermost of these unmoulted feathers with a whitish mesial fleck at tip. Some individuals appear to have none of these distinctions and are indistinguishable from adults. The juvenile body-feathers, lesser and median wing-coverts and varying number of inner greater coverts are moulted Aug.-Sept., but not wing- or tail-feathers, primary-coverts, nor rest of greater wing-coverts. *Summer*.—Owing to wearing off of fringes of feathers usually indistinguishable from adults, but occasionally mesial streaks at tips of greater coverts are still well marked.



(BIRDS 2-5THS NATURAL SIZE. FEATHERS NATURAL SIZE.)

1, Juvenile Mistle-Thrush (*Turdus v. viscivorus*). 2, Juvenile British Song-Thrush (*T. ph. clarkei*). 3, Juvenile Ring-Ouzel (*T. t. torquatus*). 4, Juvenile ♂ Blackbird (*T. m. merula*). 5, Juvenile British Dipper (*Cinclus c. britannicus*). A, Inner greater covert of juvenile Redwing (*T. musicus*). B, Under tail-coverts of adult male of Ring-Ouzel (right) and Alpine Ring-Ouzel (left.)

First winter and summer. Female.—Like adult female, but gorget less distinct and often scarcely distinguishable from rest of under-parts especially in winter; some unmoulted juvenile greater coverts usually with whitish mesial mark at tip as in male.

Measurements and structure.—♂ wing 139-145 mm., tail 101-110, tarsus 33-35.5, bill from skull 23-25 (12 measured). ♀ wing 135-144. Primaries: 1st 11-17 mm. shorter than primary-coverts, 3rd longest, 4th sometimes as long, usually 1-2 shorter, 2nd 4-8 shorter, 5th 5-9 shorter, 6th 18-22 shorter; 3rd to 5th emarginated outer webs. Outermost tail-feathers 6-10 mm. shorter than rest, 12 feathers. Other structure as in White's Thrush.

Soft parts.—Bill mostly yellow with tips and ridge of culmen brown-black (more yellow in summer than winter and in adult males than in females and first winter birds); legs and feet brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *T. t. alpestris* see under that form; *T. t. orientalis* (Caucasus, Transcaspia) is like *T. t. torquatus* on under-parts but has much more white on edgings of wing-feathers and greater coverts. Gorget distinguishes Ring-Ouzel from other Thrushes except in juvenile which is darker and less buff on under-parts than Blackbird, creamy on wings, and has different wing-formula.

FIELD-CHARACTERS.—Except on migration restricted to moorland districts and mountain ranges. Elevates tail on alighting, like Blackbird, but old birds differ from Blackbird and all other native Thrushes in having broad white or whitish gorget. White edging to feathers, especially in young, gives plumage greyish cast. Fearless in defence of nest, will strike head of an intruder with wings, and attacks Crows and Buzzards. Alarm-note a loud, hard "tac, tac, tac." Song lacks mellow fluting of Blackbird's, and in June declines to a clear piping note repeated three or four times.

BREEDING-HABITS.—Haunts moorlands, building among heather-grown banks of water-courses, or by side of moorland tracks, and in rocky ravines. *Nest.*—Chiefly built of coarse grasses, with a few heather twigs and earth in foundation, and lined with fine dry grasses. *Eggs.*—Normally 4, occasionally 5 or 3 only, and rarely 6, resembling the more boldly marked types of Blackbird's eggs, sparsely blotched with dark red-brown and showing a good deal of bluish-green ground. A scarce variety has a decided blue ground with few markings. Average of 100 British eggs, 30.3×21.5 mm. *Breeding-season.*—From last week April though May and even to July: double-brooded. *Incubation.*—By both sexes (A. Taylor); period not definitely recorded.

FOOD.—Berries (bilberry, crowberry, rowan, hawthorn, ivy, etc.) and fruit (raspberry, cherry, gooseberry, blackberry, currant, plum,

strawberry, etc.) ; also worms, small mollusca, and insects (orthoptera, larvæ of diptera and lepidoptera, etc.).

DISTRIBUTION.—*England and Wales.*—Summer-resident and passage-migrant, occasionally staying throughout winter. Nests regularly in hilly districts of Cornwall, Devon and Somerset, Wales and Welsh border, in Pennine backbone and spurs from north Staffs., Derby., and east Cheshire northwards to Cheviots, and on moors of north-east Yorks. A few breed Isle of Man. Said to have nested exceptionally in Hants., Kent, Suffolk, Norfolk, Warwick, and other counties. Has visited most counties on migration. *Scotland.*—On mainland generally distributed in summer (occasionally staying winter) ; breeds in higher districts and in some localities down to sea-level, but most common from 1,000 to 1,600 feet, and seldom nests above 2,000 feet. Rarely breeds Orkneys, but occurs spring and autumn, as in Shetlands, where does not breed. Nests in most I. Hebrides, but only sporadically Skye, and not Tiree ; in O. Hebrides a rare visitor. *Ireland.*—Thinly distributed summer-resident in wilder mountain-districts of each province, and occasionally near sea-level. Occasionally remains winter.

MIGRATIONS.—*British Isles.*—British breeding-birds probably reach summer-quarters by a westerly route, arriving in extreme south-west England, and south Ireland from second week March to early May. Passage-migrants occur in small numbers from mid-April to mid-May east of line from Isle of Wight to Wash, and in northern isles (late dates May 21, June 15, Fair Isle). Breeding-haunts are left about third week August and emigration from south coasts begins early Sept. Occurs in most counties on autumn passage. Departure movements become merged in those of passage-migrants towards end Sept. (early date 23, Fair Isle), which continue to first week Nov. East coast route (Shetlands to Channel) is very well marked, but west coast (Outer Hebrides to Scillies and Ireland) much less so.

DISTRIBUTION.—*Abroad.*—Scandinavia, migrating through Europe and wintering in Mediterranean countries. Replaced by allied forms in mountain-systems of central and south Europe, and in Caucasus, east to north Persia and Transcaspiæ, apparently also in Atlas Mountains (Algeria).

173. *Turdus torquatus alpestris* (Brehm)—THE ALPINE RING-OUZEL.

MERULA ALPESTRIS Brehm, Isis, 1828, p. 1281 (nomen nudum !); *id.*, Handb. Naturg. Vög. Deutschl., p. 377 (1831—Tirol).

DESCRIPTION (Plate 15).—*Adult male.* *Winter.*—Like that of *T. t. torquatus* but white fringes to feathers of under-parts broader

and feathers of lower-breast, belly and under tail-coverts always with white or whitish centres varying in extent; axillaries and under wing-coverts and inner webs of wing-feathers and edgings of outer webs of secondaries and greater wing-coverts whiter than in *T. t. torquatus*. Molt as in *T. t. torquatus*. *Summer*.—White fringes of feathers of breast and belly being broader than in *T. t. torquatus* do not wear off to same extent so that under-parts are always whiter.

Adult female.—Browner than male; feathers of chin and throat with broader white fringes and black of these feathers often reduced to a mesial streak; breast, belly and under tail-coverts with broader fringes and larger white centres. As compared with adult female *T. t. torquatus* can always be distinguished by white centres to feathers of breast and belly and larger white centres to under tail-coverts as well as broader fringes to feathers of under-parts; underwing and outer edgings of secondaries and greater coverts also whiter.

Nestling.—(Not examined.)

Juvenile.—Like that of *T. t. torquatus* but under-parts with white bars rather broader and more conspicuous.

First winter and summer. Male and female.—Distinguishable from adults as in *T. t. torquatus* by white mesial fleck at tip of innermost unmolted greater coverts, but when this is absent difficult to distinguish with certainty. Molt as in *T. t. torquatus*.

Measurements and structure.—♂ wing 136-143 mm., tail 100-110, tarsus 33-35.5, bill from skull 23-25 (12 measured). ♀ wing 132-140. Structure as in *T. t. torquatus*.

BREEDING-HABITS.—Much more addicted to nesting in trees than typical race, often building 40 feet or more above ground on branch of spruce and seldom low down. *Nest*.—Similar to that of *T. t. torquatus*. *Eggs*.—4-5 also similar, but perhaps paler on average showing more ground-colour. Average size of 42 eggs, 30.7×22.2 mm. *Breeding-season*.—From end April and early May to July, but many pairs do not breed till late May. Probably some are double brooded. *Incubation*.—Not definitely recorded.

FOOD.—Besides worms and slugs, insects, chiefly coleoptera (*Carabus*, *Staphylinus*, *Silpha*, *Cryptophagidae*, *Lathidrius*, *Byrrhus*, *Aphodius*, *Geotrupes*, *Melolontha*), also diptera and larvæ, and vegetable matter in stomachs. Berries and grapes eaten in autumn.

DISTRIBUTION.—*England*.—Two or more. Male, Guestling (Sussex), May 23, 1911 (M. J. Nicoll, *Brit. B.*, v, p. 72). Female, near Brighton (Sussex), March 29, 1913 (J. B. Nichols, *t.c.*, vii, p. 117). One said to have been of this form obtained in Yorks. early in 1893, and another in Norfolk Sept. 18, 1894 (*Zool.*, 1895, pp. 56, 99).

DISTRIBUTION.—*Abroad*.—Breeds in mountains of central and south

Europe, from Pyrenees to Alps, higher mountain-ranges of south Germany, east to Balkans and Carpathians. On passage obtained in Asia Minor, where it possibly breeds, also in Cyprus.

TURDUS MERULA

174. *Turdus merula merula* L.—THE BLACKBIRD.

TURDUS MERULA Linnæus, Syst. Nat., ed. x, i, p. 170 (1758—Europe. Restricted typical locality: Sweden).

Turdus merula Linnæus, Yarrell, I, p. 280; Saunders, p. 13.

DESCRIPTION (Plate 15).—*Adult male.* *Winter.*—Whole bird glossy jet-black, inner margin of wing-feathers greyish. This plumage is acquired by complete moult Aug.-Oct. (occasionally not complete until Nov.-Dec.). *Summer.*—No regular moult, but frequently some body-feathers are moulted in March. Abrasion makes wings browner.

Adult female. *Winter.*—Crown, nape and mantle very dark umber; back, rump and upper tail-coverts slightly less brown and more blackish; lores freckled with paler brown; above lores a dull greyish line; ear-coverts dark umber with whitish-brown shaft-lines; apex of chin uniform pale grey; whole throat pale grey to buffish-grey streaked dark umber to rufous-brown; upper-breast pale umber to rufous-brown, each feather with darker, somewhat triangular mark at tip varying in shape and strength; lower-breast and belly varying pale brown to grey-brown, feathers often with whitish edgings and pale shaft-lines; sides of breast and belly rather darker with usually some spots as on upper-breast; flanks and under tail-coverts umber with pale shafts; axillaries and under wing-coverts brown with pale shafts and often with rufous tips and edgings; tail brown-black; wing-feathers brown-black with greyish margins to inner webs and outer webs deep umber; wing-coverts deep umber. (N.B.—There is much individual variation in colour of under-parts, rufous tinge being sometimes scarcely noticeable, often strong and occasionally even of a pinkish-chestnut tint, dark markings vary greatly in intensity, ground-colour of throat varies from very pale grey to dull buffish-grey, belly from brown with whitish-brown edgings to dark slate-grey with pale grey edgings.) *Summer.*—Abrasion makes upper-parts rather browner, and when much worn under-parts lose much of rufous tinge and many of dark spots.

Nestling.—Down, fairly long but rather scanty, pale buffish-grey. Distribution, inner supra-orbital, occipital, humeral, ulnar and spinal. Mouth inside deep yellow, no spots; externally flanges yellowish-white.

Juvenile. Male.—Crown, hind-neck, mantle and scapulars dark umber, each feather with rufous mesial streaks, broader on

mantle than crown and broadest on scapulars ; back, rump and upper tail-coverts black-brown usually with some mesial rufous streaks on back, and tips of upper tail-coverts often rufous ; chin and centre of throat rufous-buff to whitish-buff, feathers with faint dark brown tips, sides of throat and cheeks with larger black-brown tips forming somewhat ill-defined moustachial stripes ; lower-throat, breast and flanks rufous-buff, feathers with black-brown tips ; belly rather paler and less rufous with few dark tips ; under tail-coverts brown-black with pale shaft-streaks and rufous tips ; under wing-coverts and axillaries rufous-buff ; tail slightly browner-black than adult ; wing-feathers and primary-coverts almost as brown as in adult female ; greater wing-coverts with dark umber outer webs and pale, somewhat rufous, tips, and inner five or six feathers with pale rufous distal shaft-streaks ; median and lesser wing-coverts same but with much broader wedge-shaped rufous marks at tips extending up shafts. *Female*.—Like male but upper-parts less dark, tail browner, wing-feathers considerably browner and markings on wing-coverts usually less rufescent and less striking but intensity of rufous both in these markings and in under-parts varies greatly in individuals of both sexes.

First winter and summer. Male.—Like adult male but browner, not so jet-black, some feathers of crown usually, and often some of mantle, with inconspicuous brownish edgings and most feathers of under-parts with more marked brownish or greyish edgings and often with pale shaft-streaks, chin and upper-throat sometimes with conspicuous grey edgings and occasionally grey with dark streaks almost as in female ; wing-feathers and primary-coverts browner than in adult male and unmoulted outer greater coverts conspicuously browner (and with pale tips) than new and black inner ones. The juvenile body-feathers, lesser and median wing-coverts and varying number of inner greater coverts are moulted Aug.-Oct. (occasionally extending to Nov.-Dec.), but not tail, wing-feathers or outer greater coverts.

First winter and summer. Female.—Like adult and often difficult to distinguish but upper-parts usually not quite so dark, wings rather browner and usually unmoulted outer greater coverts distinctly paler (and with pale tips) than new and dark umber inner ones.

Measurements and structure.—♂ wing 120-132 mm., tail 95-110, tarsus 32-34, bill from skull 23-27 (12 measured). ♀ wing 121-126. Primaries : 1st 3-7 mm. shorter than (exceptionally as long as) primary-coverts, 4th and 5th longest, but 5th occasionally 1-2 shorter, 3rd often as long but usually 1-3 shorter, 6th 4-7 shorter, 2nd 11-16 shorter, usually between 6th and 7th, occasionally equal to but rarely shorter than 7th ; 3rd to 6th emarginated outer webs. Outermost tail-feathers 6-10 shorter than rest, 12 feathers. Other structure as in White's Thrush.

Soft parts.—Bill: male, adult, orange-yellow, 1st winter blackish-horn in autumn, becoming marked with yellow towards end of year and orange-yellow as adult by spring and sometimes as early as January; female, adult, dark brown usually with some yellow marks, sometimes dull yellow with brown tip, rarely almost as bright orange-yellow as adult male, first winter dark brown; legs and feet dark brown; iris dark brown; eyelids yellow.

CHARACTERS AND ALLIED FORMS.—*T. m. hispaniæ* (Spain) is said to have comparatively shorter 3rd to 5th primaries; *T. m. cabreræ* (Madeira and western Canaries) has shorter wing and tail and slenderer bill; *T. m. azorensis* (Azores) like last but still shorter tail, also rounder wing; *T. m. mauritanicus* (southern N.W. Africa) has long tail (110-120 mm.) and female has dark grey-brown under-parts and usually yellow bill; *T. m. algirus* (N. Algeria, N. Tunisia) as last but with shorter wing; *T. m. aterrimus* (S.E. Europe, Asia Minor) female has paler under-parts and whiter throat; *T. m. syriacus* (Syria, south Persia) male is more slate-black and female more grey-brown, less rufous on breast and only throat streaked; *T. m. intermedius* (Turkestan) like last but larger (♂ wing 132-140); *T. m. maximus* (Kashmir) largest (♂ wing 156-160). All these races require careful comparison. Wing-formula of Blackbird differs from other British Thrushes.

FIELD-CHARACTERS.—Male's orange bill and eye-rim, and all-black plumage, umber-brown in female and dark brown and spotted in young, distinctive. Fussy and garrulous, especially at roosting-time. Notes of alarm and defiance "quilt," a thrice repeated "mink," and, in flight, a rattling cackle "tehuk, tehuk, tehuk." Song lacks variety of Song-Thrush's, a mellow fluting, ending in a discordant squeak.

BREEDING-HABITS.—Usually nests within a few feet of ground in hedges, bushes, evergreens and ivy, occasionally in sheds, on ground, or at a considerable height in trees. *Nest*.—Not unlike that of Thrush, but usually with more moss, solidified with mud and also lined with it, but with an inner layer of dry grasses. *Eggs*.—4-5, sometimes 3 only, and rarely 6, while 7 recorded twice. Ground normally bluish-green, sometimes freckled with red-brown or more or less boldly marked with red-brown and grey shell-marks. Markings at times form cap or zone and a black streak is not uncommon. Ground-colour occasionally ranges to clear blue, sometimes without markings and rare variety is white with red-brown spots. Average of 80 British eggs, 29.4×21.6 mm. *Breeding-season*.—Begins March, but is not general till April, and lasts till July as several broods are reared. *Incubation*.—By hen only as a rule, 13-14 days from last egg, 14-15 in incubator (Evans); 14 days (Ellison). *Fledging-period*.—13-14 days (Brock).

FOOD.—Largely vegetable as well as animal. Very destructive to fruit, especially during drought (apples, pears, strawberries, gooseberries, cherries, etc.). Also takes berries of many species (holly, rose, hawthorn, ivy, rowan, blackberry, cotoneaster, etc.), and seeds of many plants. Besides earthworms, insects (coleoptera, larvæ of diptera and lepidoptera, hymenoptera (ants), orthoptera and neuroptera), spiders, millipedes and small mollusca are also eaten.

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed, but in O. Hebrides and Shetlands a scarce and local breeder, though more common in Orkneys and I. Hebrides, and much more common in all these islands as winter-visitor. In Ireland has extended breeding-range to extreme west of mainland, and to Achill Island and Aran Isles.

MIGRATIONS.—*British Isles.*—Many home-bred birds migrate in autumn and return in spring, especially in north Scotland and exposed places elsewhere, many winter in southern counties, others pass to Ireland and to the Continent. A large autumn (late Sept. to end Nov.) immigration in northern isles and down both sides of Great Britain, as well as in Ireland. Some of these immigrants pass on and leave the country, others stay winter. Winter weather-emigrations also occur. A reverse movement in spring (late Feb. to early April) and lasting to end of April and even to beginning of June in northern isles.

DISTRIBUTION.—*Abroad.*—The whole of Europe, except Spain, where replaced—as in north-west Africa, the Atlantic islands, south-east Europe to Persia, Syria, Turkestan to Mongolia, Himalayas and China—by more or less closely-allied forms.

Genus MONTICOLA Boie.

MONTICOLA Boie, Isis, 1822, I, p. 552. (Containing *M. saxatilis* and *cyanus* (= *solitarius*); type by subsequent designation, Seeböhm 1881, not Gray: *M. saxatilis*).

Resembling *Turdus* but, the species which has occurred in Great Britain particularly, with tail much shorter, wing comparatively longer, nearly reaching end of tail. Bill longer, nostrils generally more exposed. Nests open, eggs uniform or spotted. Europe, Asia and Africa.

MONTICOLA SAXATILIS

175. *Monticola saxatilis* (L.)—THE ROCK-THRUSH.

TURDUS SAXATILIS Linnæus, Syst. Nat., ed. XII, I, p. 294 (1766—"Habitat in Helvetiæ, Austriæ, Borussia montibus." Restricted typical locality: Switzerland).

Monticola saxatilis (Linnæus), Yarrell, I, p. 292; Saunders, p. 17.

DESCRIPTION (Plate 14).—Adult male. Winter.—Whole upper-parts blackish-brown, each feather with brown-buff tip and blackish subterminal marks, feathers of crown, nape, upper mantle, lower rump and many scapulars with blue-slate bases mostly concealed by tips of feathers, feathers of lower mantle, back, upper rump and some scapulars with white bases showing here and there; upper tail-coverts bright orange-chestnut with buff tips; lores blue-slate with buff tips; ear-coverts, sides of neck and sides of throat buff to whitish, feathers with black-brown subterminal crescentic bands and slate-blue bases showing here and there; chin and centre of throat whitish to pale slate-blue, more uniform with few dark crescentic bands; rest of under-parts bright orange-chestnut, feathers with whitish-buff tips and black-brown subterminal crescentic bands more circular and strongly defined on breast, straighter and often broken into spots and sparser on belly; under tail-coverts same but without dark bands and only a dark spot here and there; axillaries and under wing-coverts bright orange-chestnut tipped whitish; tail-feathers bright chestnut tipped buff, central pair with exposed part dark brown and only base chestnut, rest often with dark brown marks on outer webs; wing-feathers black-brown with broad buffish-white tips and narrower pale buff fringes to outer webs; primary-coverts and greater wing-coverts same but frequently with bluish tinge on fringes of outer webs; median and lesser coverts black-brown with buffish-white tips, one or two inner median often with a white mesial streak. This plumage is acquired by complete moult July-Sept. Abrasion gradually makes pale tips of feathers of upper-parts smaller and slate-blue bases become more exposed as well as white on back and scapulars, pale tips of wing-feathers and wing-coverts become much worn.

Summer.—A moult confined to the body-feathers takes place Dec.-March and occasionally a few median and lesser wing-coverts are moulted but not rest of wings or tail. Whole crown and nape extending on to upper mantle, ear-coverts, sides of neck, chin and whole throat become pale slate-blue, feathers with narrow buff tips; scapulars, lower mantle and rump blackish-slate with narrow buff tips and blackish subterminal bands; most scapulars and feathers of lower mantle and upper rump with white bases and feathers of middle of back white with slate-blue tips; upper tail-coverts and under-parts below throat bright orange-chestnut, feathers with whitish tips but under-parts without the blackish crescentic bands of winter plumage; new feathers (when present) on lesser coverts tinged slate and on median with white mesial streaks. (N.B.—In this plumage tips of feathers soon wear off and even by April whole head and neck are uniform slate, white on back and scapulars gradually becomes more extended and purer, and under-parts become uniform chestnut, while light tips and fringes of wing-feathers and coverts wear off almost completely.)

Adult female. Winter.—Upper-parts like adult male winter but paler brown with scarcely any tinge of slate-blue and feathers of lower mantle and back only with dull buffish-white bases entirely concealed ; upper tail-coverts paler orange-chestnut than in adult male and with blackish subterminal bands ; lores buff to whitish ; ear-coverts, sides of neck and sides of throat as male but with bases dull slate-grey entirely concealed ; chin and centre of throat pale buff to creamy-white ; rest of under-parts pale buff to orange-buff (occasionally a few feathers orange-chestnut as adult male), feathers tipped buffish-white and with brown-black crescentic subterminal bands more numerous than in adult male but sparse on centre of belly ; under tail-coverts, under wing-coverts and axillaries paler than in adult male ; tail as male ; wing-feathers and wing-coverts as male but not so dark brown and without any bluish tinge on outer webs of primary- and greater coverts. Moults as in male. (N.B.—Abrasion has not a great effect as in male but upper-parts become plainer brown by wearing off of many pale tips.) *Summer.*—Moults as in male. New plumage like old but usually more chestnut on under-parts. Abrasion causes feathers of head and mantle to show certain amount of slate and back buffish-white.

Nestling.—(Not examined.)

Juvenile. Male and female.—Upper-parts much like winter adult female but more buff, less brown and with grey bases of feathers showing a good deal, feathers with dark brown tips as well as penultimate bands ; under-parts buff, feathers fringed brown, those of centre of belly and under tail-coverts uniform buff ; wings and wing-coverts as female but browner and fringes and tips more buff, median and innermost greater coverts and innermost secondaries with a buff mesial spot.

First winter. Male.—Like adult male but upper-parts browner not so blackish and bases of feathers not so blue, bases of scapulars with less white ; wings browner and buff mesial spots on innermost greater coverts and secondaries sometimes observable ; chin and middle of throat whitish with only occasional slate-blue feathers ; rest of under-parts rather paler chestnut than adult male. The juvenile body-feathers, lesser and median wing-coverts and occasionally one or two innermost secondaries and greater coverts are moulted July-Sept., but not rest of wings or tail. *Summer.*—Moults as adult male, after which it becomes (especially when abraded) impossible to distinguish with certainty but usually has browner wings, longer buff tips to upper-parts and some feathers of under-parts with black crescentic bands.

First winter and summer. Female.—Apparently impossible to distinguish with certainty from adult female.

Measurements and structure.—♂ wing 117–129, tail 60–66 tarsus 26–29.5, bill from skull 23–25 (12 measured). ♀ wing 114–123

Primaries : 1st minute, less than half primary-coverts, 3rd longest, 2nd occasionally as long, usually 1–3 mm. shorter, 4th 3–5 shorter, 5th 12–15 shorter, 6th 18–22 shorter ; 3rd clearly and 4th slightly, emarginated outer webs. Secondaries slightly shorter than 10th primary, tips square. Tail very slightly rounded laterally, 12 feathers, tips rounded. Bill somewhat slender and culmen very little curved except at tip, where upper mandible projects beyond lower. Nostrils uncovered. A few small nasal and rictal bristles.

Soft parts.—Bill dark brown, paler at base of lower mandible ; legs and feet brown ; iris dark bright brown.

CHARACTERS.—No subspecies. The short and red tail serves to distinguish it in all plumages.

FIELD-CHARACTERS.—Haunts rocky ground at high elevations as a rule. Adult male quite unmistakable ; white rump, blue head and orange breast and tail with black wings. Female has generally spotted appearance, which is also shared by young. Fulvous tail with middle feathers brown forms good character for both. Song frequently uttered on wing by male in breeding-season while flying from point to point. (F.C.R.J.)

BREEDING-HABITS.—Haunts rocky ground, old ruins, precipices etc. *Nest*.—Placed in hole among rocks or walls, and rather neatly built of grasses, roots, and moss, lined fine grasses and roots. *Eggs*.—4 to 5, sometimes 6, pale blue, often unmarked, or with faint red-brown spots. Slightly deeper in tint on average than eggs of Blue Rock-Thrush. Average of 92 eggs, 25.9×19.5 mm. *Breeding-season*.—First layings may be found from early May onward ; also in June. Said to be double brooded by some writers. *Incubation*.—Chiefly if not entirely by hen ; period 16 days (Naumann).

FOOD.—Insects of all kinds, including coleoptera (some very large), orthoptera, diptera, lepidoptera, etc. Also spiders, small mollusca and berries of various kinds, and probably also worms.

DISTRIBUTION.—*Great Britain*.—Five or more. One Therfield (Herts.) May 19, 1843 (Saunders, p. 17). Male obtained and another seen Pentland Skerries Light (Orkneys) May 17, 1910 (W. E. Clarke, (*Ann. Scot. Nat. Hist.*, 1910, p. 148, 1911, p. 135). Male and female (young) Pett (Sussex) Sept. 1 and 2, 1911 (H. W. Ford-Lindsay, *Brit. B.*, v, p. 130). [One said to have been seen, near Whitby (Yorks.) June, 1852, and another said to have been shot at Cobham (Kent).]

DISTRIBUTION.—*Abroad*.—North-west Africa, south and middle Europe (casual Heligoland), east to south Siberia and north China, wintering in tropical Africa, north India, Burma and China.

Genus CENANTHE Vieill.*

CENANTHE Vieillot, *Analyse nouv. Orn.*, p. 43 (1816—Type by tautonymy "Le Motteux" = *Motacilla cenante* L.) (*Saxicola* auct.)

Small long-winged ten-primaried Oscines with base of tail and rump conspicuously white, rarely (in non-British species) ferruginous. Distance from end of secondaries to that of primaries as long as or longer than tarsus. 1st primary shorter, equal to or distinctly longer than primary-coverts. Tail square or almost so. Bill black, slender. Tarsus in front with unbroken lamina, except at base. Rictal and nasal bristles small but distinct. Young mostly spotted, in adults sexes in most cases different, sometimes (*C. isabellina*) alike in plumage. Numerous species in Europe, Asia, Africa, Greenland and north-eastern and north-western North America; sixteen species and a number of subspecies in Palearctic region. Nests in cavities among rocks, holes in banks or under bushes, eggs blue, spotted as a rule.

Key to species of genus CENANTHE.

- | | | | |
|---|---|--|---|
| 1 | { | Upper-parts, except base of tail and upper tail-coverts, blackish or dark brown. | <i>C. leucura</i> , p. 446 |
| | | Upper-parts spotted | <i>C. cenante</i> , <i>deserti</i> ,
<i>hispanica</i> , <i>pleschanka</i> ,
and <i>isabellina</i> in juv. plumage |
| | { | Upper-parts isabelline, grey, whitish or brownish, or parti-coloured, but neither uniform blackish nor spotted | 2 |
| 2 | { | Interscapular region ashy-grey, upper wing-coverts black. | <i>C. cenante</i> , ♂ ad., p. 426 |
| | | Interscapular region and upper wing-coverts black | <i>C. pleschanka</i> , ♂ ad., p. 441 |
| | | Interscapular region white or isabelline, scapulars and upper wing-coverts black | <i>C. hispanica</i> , ♂ ad., p. 435 |
| | | Interscapular region and all or at least inner wing-coverts brown or isabelline | 3 |
| 3 | { | Less than half of outer tail-feathers white | <i>C. deserti</i> , p. 431 |
| | | More than half of outer tail-feathers white | 4 |

* The Wheatears have, for a long time, been called *Saxicola* without due consideration of facts, and it has even been stated that *Motacilla cenante* is the genotype "by subsequent designation" of Gray, 1841. This designation, however, was anticipated by Swainson, who, in 1827, designated *Motacilla rubicola* as the genotype. Thus the name *Saxicola* must be used for the Chats, which is lucky in so far as the usual name *Pratincola* is not available, because of its use for the Pratincoles in 1798, eighteen years before. By the method of elimination *Saxicola* also becomes the generic title for the Chats, and not for the Wheatears. The next oldest name for the latter is *Cenanthe* Vieillot, 1816, type by tautonymy *Motacilla cenante* L.—E.H.

- | | | |
|-----|--|----------------------------------|
| 4 { | Under wing-coverts whitish | <i>E. isabellina</i> , p. 443 |
| | Under wing-coverts mostly dark | 5 |
| 5 { | 2nd primary longer than 5th | <i>E. œnanthe</i> , ♀, p. 427 |
| | 2nd primary shorter than 5th | 6 |
| 6 { | More earthy-brown | <i>E. pleschanka</i> , ♀, p. 442 |
| | More rufescent brown | <i>E. hispanica</i> , ♀, p. 436 |

ÆNANTHE ÆNANTHE

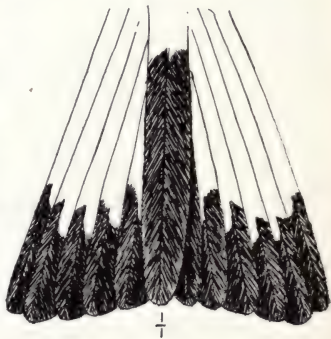
176. *Ænanthe œnanthe œnanthe* (L.)—THE WHEATEAR.

MOTACILLA ÆNANTHE Linnæus, Syst. Nat., ed. x, i, p. 186 (1758—Europe. Restricted typical locality: Sweden).

Saxicola œnanthe (Linnæus), Yarrell, 1, p. 347; Saunders, p. 19 (part).

DESCRIPTION (Plate 16).—

Adult male. Winter.—Fore-head white, feathers with grey tips concealing white in variable degree; rest of head, nape, mantle, scapulars and back pale french-grey, feathers edged and tipped buffish-brown (in quite fresh plumage with very narrow faint whitish margins); rump and upper tail-coverts white; line from nostrils over and behind eye white; lores, under eye and ear-coverts black, latter tipped brown; chin white; throat and breast pale to deep buff; rest of under-parts cream to pale buff, under tail-coverts slightly more buff; under



The Wheatear (*Enanthe œ. œnanthe*). Male adult. Showing distribution of black in tail as compared with other species.

wing-coverts and axillaries black, edged and tipped white; tail-feathers black tipped greyish-white, with white bases extending in central pair to one-third or less but in rest to two-thirds of length*; wing-feathers black, tipped, and outer webs edged pale to rich buff, narrowly on primaries, more broadly on secondaries; greater coverts as secondaries but edgings usually greyer

* Amount of black on tail-feathers varies somewhat, but younger birds usually have more black than adults on central tail-feathers, which are not infrequently black to the base and very rarely so in adults. The following measurements are taken from tip of feather to farthest extension of black. ♂ Adult winter and summer: Central tail-feathers, 28-40 mm; outermost tail-feathers, 16-24 mm. ♂ 1st winter and 1st summer: Central tail-feathers, 30-40 and often to base; outermost tail-feathers, 16-25.

and often whitish; median and lesser-coverts black tipped white to creamy-buff. This plumage is acquired by complete moult July-Aug. *Summer*.—A moult usually confined to the body-feathers takes place Jan.-Feb., but occasionally innermost greater wing-coverts and rarely innermost secondary are moulted. New plumage as winter but upper-parts more french-grey, buffish-brown tips and edgings being smaller; breast rather brighter buff; belly white; innermost greater covert (when renewed) edged french-grey and tipped buff. Abrasion of tips and edgings of feathers makes wing-feathers and coverts gradually jet-black and usually by January there are few edgings left and tips of tail-feathers are worn off; in winter plumage, and more markedly in summer, abrasion gradually makes fore-head white, eye-stripe more conspicuous, upper-parts pure french-grey, ear-coverts black and under-parts white and sometimes almost pure white with only tinge of buff on breast.

Adult female. Winter.—Whole upper-parts, except rump and upper tail-coverts which are white, brown (varying from rufous brown to buffish-brown); eye-stripe pale cream; lores dusky; ear-coverts brown; chin pale cream; throat pale buff; breast deeper buff; rest of under-parts creamy-buff (buff of under-parts varies in intensity); tail, wing-feathers and wing-coverts as adult male but dark brown not black and edgings and tips especially of wing-coverts, darker and brownish-buff to buff, never whitish. *Summer*.—Moult as in male, after which upper-parts become greyer-brown, eye-stripe white, lores darker (occasionally brown-black), ear-coverts darker brown and under-parts paler buff. Abrasion causes upper-parts to become grey but never so pure a grey as in adult male, pale edgings wear off wings.

Nestling.—Down, dark grey, long and fairly plentiful except on femoral. Distribution, inner supra-orbital, occipital, humeral, spinal and femoral and some very short filaments on caudal tract. Lower portion of spinal tract without down. Mouth inside pale orange, no spots; externally flanges *very* pale yellow.

Juvenile. Male and female.—Upper-parts greyish- to buffish-brown, each feather with pale subterminal spot and narrow dark brown tip; rump and upper tail-coverts white to creamy-white, feathers usually tipped very narrowly dark brown; slight indication of creamy eye-stripe; ear-coverts buff edged and tipped brown; chin and throat creamy-white and breast rather darker buffish-cream, feathers lightly tipped brown, giving a somewhat mottled appearance; belly and under tail-coverts pale cream with scarcely any dark tips; tail-feathers, wing-feathers and greater wing-coverts as adult female but lesser and median coverts with pale cream wedge-shaped spots at tips.

First winter. Male and female.—Like adult winter female and neither sex seems distinguishable, occasionally some of the

new median coverts have small white wedge-shaped spots at tips as in juvenile. The juvenile body-feathers, lesser and median wing-coverts are moulted in August but not tail- or wing-feathers, primary-coverts or greater wing-coverts.

First summer. Male.—Moult as in adult after which becomes like adult but upper-parts browner (even when much worn, never so pure grey), ear-coverts more tipped brown, fore-head usually with less white, belly rather more creamy and not so whitish; tail and especially wings and wing-coverts much browner black.

First summer. Female.—Like adult female, but individuals with rather browner and less grey upper-parts and rather less dark wings may be first summer birds.

Measurements and structure.—♂ wing 94-98 mm. (one 100), tail 52-60, tarsus 25-27, bill from skull 16-18 (12 measured). ♀ wing 89-96. Primaries: 1st 2-6 mm. shorter than primary-coverts, 3rd longest, 4th often as long, sometimes 1-2 shorter, 2nd 1-4 shorter, 5th 5-8 shorter, 6th 10-17 shorter; 3rd and 4th primaries emarginated outer webs. Secondaries slightly shorter than 10th primary, tips fairly square. Tail square, but central pair shorter than rest, 12 feathers, tips rounded. Bill somewhat slender, base broad and rather flat, tip of upper mandible rather curved and projecting beyond lower. Nostrils partially covered by membrane. A few nasal and rectal bristles, the latter rather stiff.

Soft parts.—Bill, legs and feet black; iris brown-black.

CHARACTER AND ALLIED FORMS.—In *Æ. æ. seebohmi* (Atlas Mts.) male has black throat but female is like typical form with slightly paler upper-parts. For differences of *Æ. æ. leucorrhoea* see under that form. *Æ. æ. argentea* (Turkestan), *Æ. æ. rostrata* (Syria, Arabia) and *Æ. æ. nivea* (Sierra Nevada, S. Spain) have slight differences and may be separable. For differences of *Æ. isabellina* see under that species.

FIELD-CHARACTERS.—A bird of downs and mountain-sides, sea-cliffs, sand-dunes and waste places, where its white rump and black wings are very conspicuous as it flies low over ground. Pale greys and buffs and pure black and white of its plumage, its upright carriage when at rest—usually perched on slight elevation such as clod or stone—varied with bows and curtsies, and long hops by which it progresses, separate it from other common British birds, but close attention to details are necessary to distinguish it, especially female, from other Wheatears. Song, sweet, modulated and, to some extent imitative, is often uttered on wing. Alarm-note, a loud “weet-chack-chack.”

BREEDING-HABITS.—Frequents commons, bare hillsides, sea-shore, warrens, etc., and breeds either in hole in ground or under stones, in old walls, etc. *Nest.*—Built of grasses and sometimes moss, lined grass and hair, feathers or bits of wool. *Eggs.*—Normally 6,

sometimes 5, occasionally 7, pale blue, unmarked in most cases, but occasionally showing dark red-brown spots. Average of 50 eggs, 20.7×15.8 mm. *Breeding-season*.—Late April or early May. *Incubation*.—Chiefly by hen, but male also takes part. Period about 14 days. Usually single brooded, but said to be double brooded in Shetlands.

FOOD.—Chiefly insects: coleoptera (*Geodephaga*, small *Carabidæ*, *Staphylinidæ*, and *Rhyncophoridæ*), diptera (*Muscidæ*, *Tipulidæ*), hymenoptera (including *Bombus* and ants), larvæ of lepidoptera, etc. Also minute land mollusca and spiders.

DISTRIBUTION.—*British Isles*.—Summer-resident; said to winter occasionally. Widely distributed, though local. Also passage-migrant.

MIGRATIONS.—*British Isles*.—Summer-residents begin to arrive second week March (early dates Sussex, Jan. 6, 1912; I. of Wight, Feb. 22, 1913; Suffolk, Feb. 28, 1912; March 1, 5, 6.) Main arrival end of third week March to mid-April. Passage-migration throughout country, but specially conspicuous by east and west coastal routes (Channel to northern isles) from last few days March to mid-May, stragglers to nearly mid-June. Summer-residents begin to move south mid-July and leave south coast early Aug. (early date July 10/11, 1910 St. Catherine's Lt. (I. of Wight)), later on movement becomes merged in that of passage-migrants that begin to arrive in northern isles early Sept. and pass south by east and west coastal routes, and possibly overland to some extent as well, up to third week Oct. Evidence also of immigration on to east coast (Forth to Thames) from about mid-Sept. Stragglers continue to pass in most years up to mid-Nov. (late date 20, Flannan Isles, O.H.) Evidence of passage-migration east coast Ireland, spring and autumn.

DISTRIBUTION.—*Abroad*.—Whole of Europe to north (and possibly south) Spain, east, central and north Asia and northern Alaska; wintering in tropical Africa. Represented by other forms in Greenland and Iceland and in the Atlas Mountains, while distribution and characters of others which have been separated require further study and confirmation.

177. *Ænanthe ænanthe leucorrhoa* (Gm.)—THE GREENLAND WHEATEAR.

MOTACILLA LEUCORHOA Gmelin, Syst. Nat., i, ii, p. 966 (1789—Senegal).
Saxicola ænanthe (L.), Saunders, p. 19 (part).
Saxicola ænanthe leucorrhoa (Gmelin), C. B. Ticehurst, Brit. B., ii, p. 271.

DESCRIPTION.—*Adult male*. *Winter*.—Like adult male *Ænanthe æ. ænanthe* but rather browner and less grey upper-parts, ear-coverts

usually browner, less black, throat and breast sometimes deeper buff but this is variable. *Summer*.—Upper-parts seem never to become so pure french-grey (i.e., more tinged with brown) as in adult of typical form, throat and breast decidedly richer and deeper buff and belly less whitish, this difference being observable even in worn plumage.

Adult female. Winter and first winter male and female.—Upper-parts as in typical form, under-parts as a rule deeper buff but some examples of typical form cannot be distinguished.

Nestling.—(Not examined.)

Juvenile.—Like that of *Æ. æ. ænanthe*.

First summer. Male.—Upper-parts less grey than in typical form and throat and breast decidedly richer and deeper buff and belly less whitish.

N.B.—Moults as in *Æ. æ. ænanthe*. The deeper buff of under-parts is distinctive in males in spring and summer, but is an uncertain character in autumn even when first winter and adult birds are carefully separated. Black on tail-feathers slightly more extended, measurements taken as in *Æ. æ. ænanthe* being :—♂ adult winter and summer : central tail-feathers 35-42 and not infrequently to base ; outermost tail-feathers 20-28. ♂ 1st winter and 1st summer : central tail-feathers 36-44 and often to base ; outermost tail-feathers 20-28.

Measurements and structure.—♂ wing 103-108 mm. (exceptionally as short as 100 and as long as 110), tail 58-62, tarsus 27-33, bill from skull 17-19 (12 measured). ♀ wing 96-104. Structure as in *Æ. æ. ænanthe*.

FIELD-CHARACTERS.—Closely resembles Common Wheatear, but has darker buff under-parts, is slightly larger, and frequently perches in trees. Strictly a bird of passage, later than Common Wheatear, and often seen in May in places where that species does not nest.

BREEDING-HABITS.—Similar to those of Common Wheatear and *Nest* also alike. *Eggs*.—Clutch often larger than with southern birds, 6 to 8 and even 9 in number : similar in appearance but slightly larger on average. Average of 40 eggs, 21.7×15.8 mm. *Breeding-season*.—June. Hantzsch gives incubation-period in Iceland as 13-14 days. Single brooded.

FOOD.—Diptera and larvæ, acaridæ, spiders, etc. Also bits of phanerogams and moss in stomach (Le Roi).

DISTRIBUTION.—*British Isles*.—Passage-migrant through Great Britain and Ireland.

MIGRATIONS.—*British Isles*.—Probably passes through most counties as arrives on whole of southern seaboard, but travels mainly by

east and west coastal routes (Channel to northern isles) and east and west coasts Ireland, third week April to end first week June (early dates April 1, 8-10.) Similar movements in reverse direction autumn from last few days August (early dates Tarbatness Lt. (E. Ross), Aug. 5, 1913, Pentland Skerries (Orkney), Aug. 7, 1912. Bardsey Lt. (Carnarvon) Aug. 15, 1909) to second week Oct., stragglers to early Nov. (late dates Barra (O.H.) Nov. 17 and 18, 1911, Clyde, Nov. 30, 1913).

DISTRIBUTION.—*Abroad*.—Greenland and north-east America west of Davis Strait to Labrador, and apparently Iceland, though a series from there should be re-examined, as they appear to be, at least partly, intermediate. Migrates through north-west Africa, Canaries, and Azores to Senegambia, in America to New York, New Brunswick, Ontario, Bermudas, probably Colorado and Louisiana, accidental Cuba.

ÆNANTHE DESERTI

178. *Ænanthe deserti homochroa* (Tristram) * —THE WESTERN DESERT-WHEATEAR.

SAXICOLA HOMOCHROA Tristram, Ibis, 1859, p. 59 ("Hab. in Sahara Tunitanâ." The type, a female, obtained in the Souf, near boundary of Algeria and Tunisia. Tristram believed the female to be a different species from the male, but the name must be adopted as it clearly refers to the western Saharan race).

?*Saxicola deserti* (Temminck), Yarrell, III, p. viii; *S. deserti* Rüppell, Saunders, p. 25 (? part).

Ænanthe deserti deserti (Temm.), Hand-List Brit. B., p. 80 (1912).

DESCRIPTION.—*Adult male*. *Winter*.—Crown and nape pale greyish sand-colour, feathers tipped greyish; mantle, scapulars and back same but richer sand-colour; rump and upper tail-coverts whitish-buff; stripe over and behind eye buffish-white; lores, ear-coverts, whole chin and throat and sides of neck extending towards nape black, feathers slightly tipped white; breast and flanks sandy-buff; centre of belly and under tail-coverts buffish-white; under wing-coverts and axillaries black tipped white; all tail-feathers with rather more than basal third white and rest black narrowly tipped buffish-white (black measured from tip of feathers to its farthest extension basally is from 35 to 43 mm.); primaries, outer webs and tips black narrowly edged and tipped whitish, inner webs paler and browner edged white, increasing in breadth at bases;

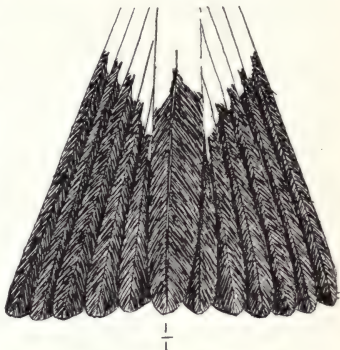
* I have re-examined the female from Holderness, formerly in Mr. J. H. Gurney's collection and now at the Tring Museum, and find it to be of the sandy-coloured Saharan race. When I first examined this bird in 1908 I had not the material to show that *Æ. d. homochroa* was separable from *Æ. d. deserti*.—E.H.

secondaries same but with broader white edges to outer webs and tips and more white on inner webs, innermost three secondaries brown broadly edged sandy-buff, the innermost with most of outer web sandy-buff; primary-coverts black narrowly tipped white; greater wing-coverts black edged and tipped white, innermost feathers with most of outer webs white and inner webs brown mixed with white; median and lesser wing-coverts black tipped sandy-buff to white, inner feathers mostly sandy or white with black bases. This plumage is acquired by complete moult June-Aug. *Summer*.—The ear-coverts and sometimes a few feathers on chin are moulted Feb.-April but otherwise no moult. Abrasion of tips and edges of feathers makes throat, wing- and tail-feathers and outer wing-coverts uniform black, mantle and scapulars richer sandy and upper tail-coverts and rump whiter, while in much worn plumage blackish-grey bases of feathers of crown and nape are disclosed and black extending from sides of neck more prominent.

Adult female. Winter.—Upper-parts as male but rump and upper tail-coverts rather more buff; lores and eye-stripe pale buff; ear-coverts sandy-brown to dark brown; chin and throat buffish-white; axillaries and under wing-coverts white with brownish-black bases; rest of under-parts as male; tail as male but browner black; wing-feathers browner with wider and more buff edgings and tips; wing-coverts browner with more sandy-buff and less white edgings and tips. Moult as in male. *Summer*.—Abrasion makes rump and under-parts whiter; feathers of chin and throat when much worn show dark bases; much of buff edgings wears off wing-feathers and wing-coverts but not to same extent as in male. N.B.—Some females have considerable amount of brown-black on chin and throat.

Nestling.—(Not examined.)

Juvenile.—Upper-parts as adult female but each feather with pale centre and brownish tip giving upper-parts slightly spotted appearance; rump and upper tail-coverts whiter than in adult female; lores and ear-coverts sandy-buff; under-parts buffish-white, feathers of throat and breast with brownish-buff tips;



The Western Desert-Wheatear (*Enanthe d. homochroa*). Adult male. Showing large amount of black on tail.

tail- and wing-feathers and greater wing-coverts as adult female ; median and lesser coverts with broad sandy-buff tips.

First winter. Male.—Like adult but feathers of chin and throat with longer white tips sometimes almost entirely concealing black ; tail and wing-feathers and greater wing-coverts browner-black with broader and more sandy-buff edgings and tips as in adult female ; inner median and lesser coverts usually with sandy-buff and not such white tips as in adult male. The juvenile body-feathers, lesser and median wing-coverts and varying number of innermost greater wing-coverts and sometimes innermost secondary are moulted June-Aug., but not primary-coverts or tail nor rest of greater wing-coverts or wing-feathers. *Summer.*—Same differences as in winter but in much worn plumage only distinguishable from adult male by browner wings.

First winter and summer. Female.—Like adult female.

Measurements and structure.—♂ wing 87-94 mm., tail 57-66, tarsus 24-26, bill from skull 17-18 (12 measured). ♀ wing 84-89. Primaries : 1st equal to or 1-2 mm. shorter or longer than primary-coverts, 3rd and 4th longest, 2nd and 5th 2-5 mm. shorter, 6th 8-12 shorter ; 3rd to 5th emarginated outer webs. Other structure as *Æ. æ. ænanthe*, but central pair of tail-feathers not noticeably shorter than rest.

Soft parts.—Bill, legs and feet, black ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *Æ. d. albifrons* see under that form ; *Æ. d. deserti* (Nubia, north Arabia) is much like *Æ. d. albifrons* in colour of upper-parts but with less white on inner webs of wing-feathers and in size equals *Æ. d. homochroa*. For differences of *Æ. hispanica* see "Characters" under that species.

FIELD-CHARACTERS.—Haunts hummocky country in deserts, and is rather silent, appearing for a moment and taking short flight before again showing itself. Sand-coloured, with some black, no white, except on rump. More black in tail and light markings on wings distinguish it from Black-eared and Pied Wheatears, and black throat of male separates it at a glance from other Wheatears on British List. Has short song, during which it often rises perpendicularly in the air, but not high. (F.C.R.J.)

BREEDING-HABITS.—Found in sandy desert, nesting in burrows in sides of hillocks or cavities among roots of bushes and in banks of gullies. *Nest.*—Loosely built of dry grass-stems and dead plants, with a few bits of wool, feathers, or hair in lining. *Eggs.*—3 to 5 as a rule, rarely 6, delicate bluish-green, like those of *Æ. hispanica* and spotted with rusty-red, chiefly towards big end. Average size of 43 eggs, 19.9×14.9 mm. *Breeding-season.*—From end March to early May in north-west Africa.

FOOD.—Insects and larvæ, but details lacking. Diptera, numerous small coleoptera, also orthoptera.

DISTRIBUTION.—*Great Britain*.—Female Holderness coast (Yorks.) Oct. 17, 1885 (W. E. Clarke, *P.Z.S.*, 1885, p. 835), is of this form. Other Desert-Wheatears which we have not examined, are : male, near Alloa (Clackmannan), Nov. 26, 1880 (J. J. Dalgleish, *op. cit.*, 1881, p. 453) ; male, near Arbroath (Forfar), Dec. 28, 1887 (H. M. Drummond-Hay, *Ibis*, 1888, p. 283) ; male “ near the sea ” (Norfolk) Oct. 31, 1907 (J. H. Gurney, *Zool.*, 1908, p. 132).

DISTRIBUTION.—*Abroad*.—Sahara from Cape Blanco to Natron Valley in Lower Egypt. Replaced by *Æ. d. deserti* in Nubia and north Arabia to southernmost Palestine, by *Æ. d. albifrons* in Central Asia to Khirgiz Steppes.

179. *Ænanthe deserti albifrons* (Brandt)—THE EASTERN DESERT-WHEATEAR.

SAXICOLA ALBIFRONS Brandt, Bull. Acad. St. Petersburg, II, p. 139 (1844—W. Siberia).

Saxicola deserti atrogularis Blyth, Hartert, Vög. pal. Fauna, i, p. 684.

DESCRIPTION.—Like *Æ. d. homochroa* but more greyish-sandy, not so rich sandy on upper-parts and thus like *Æ. d. deserti* but with more white on inner webs of wing-feathers, especially noticeable in adult male in which white usually extends to shaft of feathers.

Measurements.—♂ wing 92-101 mm. (one 88), tail 59-67, tarsus 25-28, bill from skull 16-18 (12 measured). ♀ wing 87-97. Larger than *Æ. d. homochroa* but extreme measurements overlap.

BREEDING-HABITS.—In Turkestan breeds up to over 12,000 ft. on steppes and sandy plains, nesting in burrows or holes in walls of wells and under bushes. *Nest*.—Probably similar to that of western race. *Eggs*.—3 to 5, pale bluish-green with rusty-red speckles and spots. Average size of 9 eggs, 20.1 × 15 mm. *Breeding-season*.—Eggs in June on highlands of Central Asia.

FOOD.—Lynes records ants and other insects, caterpillars and in two cases small seeds in stomach. Dickson and Ross also record ants, and Witherby larvæ of ants.

DISTRIBUTION.—*Great Britain*.—Male Pentland Skerries Light (Orkneys), June 2, 1906 (W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1906, p. 138) and male Scotney (Kent), May 21, 1913 (H. W. Ford-Lindsay, *Brit. B.*, VII, p. 117) are of this form.

DISTRIBUTION.—*Abroad*.—From Khirgiz Steppes to Saissansk, Dsungaria, Nan-Shan, Ala-Shan, Ordos, and south Kuku-Nor. (Specimens obtained on Heligoland probably belong to this form.) On migration through south-west Asia to south Arabia, Sokotra, and north-east Africa.

ŒNANTHE HISPANICA*

180. Œnanthe hispanica hispanica (L.)—THE WESTERN BLACK-EARED WHEATEAR.

MOTACILLA HISPANICA Linnæus, Syst. Nat., ed. x, i, p. 186 (1758—
 "Hispania." Typical locality: Gibraltar).

Saxicola stapazina (Vieillot), Yarrell, III, p. viii; Saunders, p. 23;
S. stapazina (Linnæus) nec Vieillot, *id.*, Brit. B., I, p. 6; *S. occidentalis*,
id., *l.c.*, p. 7; *S. h. hispanica*, Hartert, *op.c.*, IV, p. 131.

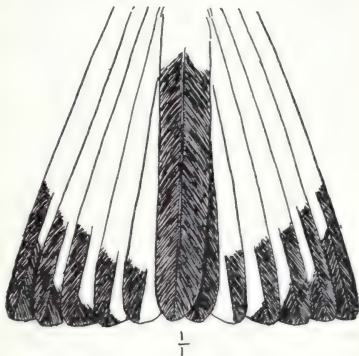
DESCRIPTION.—*Adult*

male. Winter.—Fore-

head buff; crown, nape
 and mantle rich foxy-
 buff; scapulars black with
 long rich buff tips and
 varying amount of buff
 on inner webs and often
 some inner feathers with
 no black; back, rump
 and upper tail-coverts
 white tinged cream; nar-
 row line from nostrils to
 lores, lores, narrow line
 over eye, broad line under
 eye and ear-coverts jet-
 black; chin and upper-
 throat whitish-buff or jet-
 black with feathers nar-
 rowly tipped white (N.B.

—in black-throated ex-

amples of this form black of sides of throat does not extend so far
 down as the black of ear-coverts); lower throat pale buff; breast
 rich buff; rest of under-parts pale buff; axillaries and under wing-
 coverts black, narrowly tipped white; tail-feathers narrowly tipped
 white, central pair black with only basal quarter or third white, rest
 mostly white with about distal quarter black,† outermost feathers
 with more black which often extends to half length of feather on
 outer webs; wing-feathers jet-black with narrow pale buff tips
 and edges to outer webs and whitish edges to inner webs, inner
 secondaries with broader and deeper buff tips and edgings to outer



The Western Black-eared Wheatear (*Œnanthe h. hispanica*). Adult male. Showing distribution of black in tail as compared with other species.

* Clearly described in 1758 as *Mot. hispanica*. As the black-throated and white-throated birds (*stapazina* and *aurita* of former times) are only dimorphisms of the same species, *hispanica* takes the place of both.—E.H.

† Black varies in extent and is often divided and broken up by white and occasionally some inner feathers have only small black marks or no black at all. Black measured from tip of feather to its farthest extension basally is in outermost feather 20-32 mm. and in 4th feather from outer no black to 20 mm.

webs ; primary-coverts as primaries ; greater coverts as inner secondaries ; median coverts with narrower whitish tips ; lesser coverts same, but with still narrower whitish tips (some entirely black). This plumage is acquired by complete moult in July-Aug. *Summer*.—A moult usually confined to ear-coverts and chin but occasionally extending to some feathers of throat and crown takes place Dec.-Feb. As winter, but abrasion gradually makes fore-head and fore-part of crown whiter and often quite white, but when very much worn black bases of feathers begin to show, nape and mantle gradually become pale sandy-buff and occasionally in very worn examples white with remains of buff here and there, white tips wear off tail-feathers and buff tips and edgings of wing-feathers, wing-coverts and axillaries gradually wear off making wings almost uniform black except for whitish edgings of inner webs of wing-feathers, under-parts become pale buff to almost pure white.

Adult female. Winter.—Whole head, mantle and upper-back sandy-brown ; scapulars dark brown and buff-brown ; lower-back, rump and upper tail-coverts white tinged cream as in male ; lores and feathers under eye brown (sometimes blackish), feathers with greyish-white tips ; ear-coverts sandy-brown to dark brown and occasionally blackish-brown ; chin and throat whitish-buff, feathers with brown to black-brown bases varying in extent, sometimes entirely concealed, sometimes showing more or less ; rest of under-parts as male but buff of breast less rich ; under wing-coverts, axillaries, wing-feathers and all wing-coverts much browner black than adult male and with wider and more brownish-buff edgings and tips ; tail as adult male but black browner and extending usually farther and very rarely broken up by white. Moult as male. *Summer*.—Abrasion does not make any marked difference as in adult male. Much of pale edgings on wings remains. Abrasion reveals black-brown bases of feathers of chin and throat and this becomes prominent in some examples.

Nestling.—Down pale mouse-colour. Distribution, inner supra-orbital, occipital, humeral, spinal and femoral (description from partially feathered skin).

Juvenile.—Feathers of whole head, mantle and upper-back with pale buff to buffish-white centres with narrow brown tips giving a spotted appearance ; rump and upper tail-coverts white ; ear-coverts dark brown with pale buff shaft-streaks ; chin and throat dull buffish-white, some feathers very slightly tipped brown ; breast rather more buff, feathers with narrow brown tips and edges ; rest of under-parts pale buff ; axillaries black-brown with pale buff tips ; tail as in adults ; wing-feathers, primary- and greater coverts as adult female ; median and lesser wing-coverts black-brown with long whitish-buff tips.

First winter. Male.—Like adult male but upper-parts rather browner and darker, not so bright, feathers of lores and ear-coverts

and of chin and throat in black-throated examples with long buff tips concealing the black to a considerable extent, wing-feathers, primary-coverts and outer greater coverts browner, not jet-black and with wider buff edgings, median and lesser wing-coverts with much longer and buffer tips as in adult female, no constant difference in white and black of tail but very rarely indeed with so little black as in some adult males. The juvenile body-feathers, lesser and median wing-coverts and varying number of inner greater coverts are moulted July-Aug., but not wing- or tail-feathers, primary-coverts or outer greater coverts. *Summer*.—Moult as adult. Abrasion has same effect as in adult but crown and mantle usually browner and less pale sandy-buff and a good many edgings remain on wing-coverts and wing-feathers, which become very brown compared to jet-black of adult, in black-throated examples whitish tips on throat do not entirely wear off.

First winter and summer. Female.—Apparently like adult female.

Measurements and structure.—♂ wing 86–93 mm., tail 58–66, tarsus 22–24, bill from skull 16–18 (12 measured). ♀ wing 85–90. Primaries: 1st 1–5 mm. longer than, or occasionally equal to, primary-coverts, 3rd and 4th longest, 2nd 4–7 mm. shorter, 5th 1–3 shorter, 6th 6–10 shorter; 3rd to 5th emarginated outer webs. Rest of structure as in *Æ. æ. œnanthe*.

Soft parts.—Bill, legs and feet black; iris brown.

CHARACTERS AND ALLIED FORMS.—For differences of *Æ. h. melano-leuca* see under that form. Some males from western and north Persia and Caucasus have black extended in continuous stripe from ear-coverts to shoulder and have been separated as *Æ. h. gaddi*, but this appears to be an individual variation. More black on central pair and much less black on rest of tail-feathers distinguishes this species from *Æ. deserti* which has distal two-thirds of all tail-feathers black. Male of *Æ. p. pleschanka* easily distinguished by its black mantle, female decidedly more earth-brown and less sandy-brown on upper-parts than *Æ. h. hispanica* and lower part of throat and upper-breast darker, but rarely some females of *Æ. p. pleschanka* are very difficult to distinguish from some females of *Æ. h. melano-leuca*, though mantle of latter is usually buffer and less earth-brown and breast more sandy-buff and less brown. Juveniles of these two species cannot be distinguished with certainty.

FIELD-CHARACTERS.—A typical Wheatear, but colours contrast much more strongly than in Common Wheatear. Habits and general effect in eared form very similar, but grey on crown and back of male replaced by pale creamy-brown. Male of black-throated form is readily distinguished from Pied Wheatear by its creamy (not black) back and from Desert-Wheatear by its black wings and white on tail. White rump in all stages noticeable in

flight and tail pattern distinguishes it from all Wheatears on British List except Common and Pied. (F.C.R.J.)

BREEDING-HABITS.—Frequents rough hillsides, ruins, broken ground, sides of water-courses, etc. *Nest.*—Sometimes in hole, but often in recess on hillside sheltered by growing plant or projecting stone; built of bents, moss and grasses lined fine roots and often hair. *Eggs.*—4 or 5, sometimes 6, bluish-green in ground-colour, deeper than those of Common Wheatear, and spotted with reddish-brown with tendency to zone, but as a rule less distinctly than eggs of eastern form. Average of 54 eggs, 19.9×15 mm. *Breeding-season.*—From first week May onward and as eggs are found as late as June and July, probably two broods are reared. *Incubation.*—Apparently by hen only; period not ascertained.

FOOD.—Little definite information, but apparently almost entirely insects, taken on ground and on wing; probably chiefly small coleoptera, orthoptera and diptera.

DISTRIBUTION.—*Great Britain.*—Eleven obtained and one seen, viz.: male (black-throated) seen Spurn (Yorks.) Sept. 18, 1892 (Saunders, p. 23); male near Polegate (Sussex) May 28, 1902; male near Hooe (Sussex) May 22, 1905; male (black-throated) near Lydd (Kent) May 23, 1906 (Saunders, *Brit. B.*, i, pp. 6, 7); male Winchelsea (Sussex) May 2, 1907 (J. B. Nichols, *t.c.*, p. 185); male (black-throated) Fair Isle Sept. 25, 1907 (W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1908, p. 81); female St. Kilda (Outer Hebrides) Sept. 21, 1911 (*id.*, *Studies in Migration*, ii, p. 217); two males (black-throated) near Winchelsea (Sussex) May 16 and 19, 1912 (J. B. Nichols, *Brit. B.*, vi, p. 184); two males (black-throated) Hollington (Sussex) May 5, 1915 and St. Leonards Oct. 30, 1915 (H. W. Ford-Lindsay, *op. cit.*, ix, pp. 121 and 249); male (black-throated) Tuskar Rock (Wexford) May 16, 1916 (C. J. Patten, *Irish Nat.*, 1916, p. 100, *Nov. Zool.*, xxiv, pp. 1–16).

DISTRIBUTION.—*Abroad.*—Western Mediterranean countries, south of the Alpine range and south Tyrol. Passing through the western Sahara and observed as far south as Senegambia. Has been shot on Heligoland. Replaced in eastern Mediterranean countries, east to Asia Minor and Syria, by *Æ. hispanica melanoleuca*.

181. *Ænanthe hispanica melanoleuca* (Güld.)—THE EASTERN BLACK-EARED WHEATEAR.

MUSCICAPA MELANOLEUCA *Güldenstädt*, *Nov. Comm. Petrop.*, xix, p. 468 pl. 15 (1775—Georgia, Caucasus).
Saxicola xanthomelena *Hemprich & Ehrenberg*, *Symb. Phys. Aves*, fol. c, aa, no. 6 (1833—Egypt. Description of the autumn-plumage of the black-throated form).

Saxicola amphileuca Hemprich & Ehrenberg, t.c., fol. bb, no. 4 (1833—Syria. Description of the white-throated form in summer-plumage).
Saxicola stapazina var. *melanoleuca* Seeböhm, Hist. Brit. Birds, I, p. 307.
Saxicola stapazina Linn. (= *S. aurita* Temm.), M. J. Nicoll, Bull. B.O.C., XVI, p. 22; *Saxicola stapazina* (Linn.), nec Vieillot, Saunders, Brit. B., I, p. 6.
Enanthe hispanica xanthome'ena, (Hempr. & Ehr.), Hand-List Brit. B., p. 82, 1912.



1, The Western, 2, The Eastern Black-eared Wheatears (black-throated form). Adult males, summer. Showing the difference in black on throat. N.B.—The difference is not always so marked as in these two examples.



1, The Western, 2, The Eastern Black-eared Wheatears. Adult males, summer. Showing difference in black on forehead.

DESCRIPTION.—*Adult male. Winter.*—Like that of *Æ. h. hispanica* but crown dirty greyish-brown not foxy-buff; mantle buff washed with varying amount of greyish-brown, but paler, browner and much less rich buff than in *Æ. h. hispanica*; scapulars usually entirely black with buff tips; black line extends from nostrils across forehead; in black-throated examples black extends farther down throat making a straight line with black of ear-coverts; inner webs of wing-feathers black not edged whitish. Moults as in *Æ. h. hispanica*. *Summer.*—Abrasion causes same changes as in *Æ. h. hispanica* but crown and mantle become whiter and often quite white and scapulars jet-black, less worn examples usually have some traces of brown on crown, and varying amount of sandy-buff on mantle.

Adult female.—Like that of *Æ. h. hispanica* but crown and mantle dark brown, not sandy, and usually easy to distinguish but some examples are somewhat sandy and approach dark examples of typical form very nearly especially in worn summer plumage.

Those examples with blackish on chin and throat have this extended farther down throat than similar females of *Æ. h. hispanica*. In other respects like *Æ. h. hispanica*.

Juvenile.—Like that of *Æ. h. hispanica*.

First winter. Male.—Differing from adult male as in *Æ. h. hispanica*. Crown and mantle considerably darker brown and less sandy than first winter *Æ. h. hispanica*; scapulars usually darker than in *Æ. h. hispanica*; black line on fore-head usually present but rarely absent; black of throat more extended as in adult; inner webs of wing-feathers usually margined with dull whitish and indistinguishable from *Æ. h. hispanica* but occasionally black as in adult. Moults as in *Æ. h. hispanica*. *Summer*.—Crown and mantle browner than in first summer *Æ. h. hispanica*, some very worn examples are almost white on these parts like adults, but there are always traces of brown edgings. Distinctions between two forms thus not so clear in first winter and summer as in adult males.

Measurements, structure and soft parts.—As in *Æ. h. hispanica*.

BREEDING-HABITS.—Very similar to those of western form. *Nest*.—Also similar but generally lined with hair (Reiser). *Eggs*.—4 or 5, sometimes 6, much like those of western form, but spots on average more distinct and darker. Average of 86 eggs, 18.9×14.8 mm. *Breeding-season*.—From end April and early May onward. *Incubation*.—By hen alone (Reiser); period not ascertained.

FOOD.—Probably chiefly insects. Baldamus records coleoptera (*Halitica*, Carabidæ, etc.), and Lynes found small snails, millipedes, beetles, flies, ants, grubs and a few seeds.

DISTRIBUTION.—*England*.—Four obtained and two seen, viz.: male (black-throated) near Bury (Lancs.) May about 8, 1878 (H. Seebohm, *Hist. Brit. B.*, I, p. 307, *Zool.*, 1886, p. 193); male near Pett (Sussex) Sept. 9, 1905 (M. J. Nicoll, *Bull. B.O.C.*, xvi, p. 22); female and male Westfield and Pevensey (Sussex) April 21 and 30, 1914 (J. B. Nichols, *Brit. B.*, ix, p. 121); male (black-throated) seen Cleveland Hills (Yorks.) June 6, 1915 (W. S. Medlicott, *op. cit.*, ix, p. 122); male (black-throated) probably of this form seen by H. Massey near Didsbury (Lancs.) March 29, 1915 (F. C. R. Jourdain, *op. cit.*, ix, p. 155).

DISTRIBUTION.—*Abroad*.—Breeds from western Persia, Asia Minor and Palestine westwards throughout Greece, Turkey, Bulgaria, Roumania, south Russia (Crimea) to Montenegro, Croatia and Dalmatia, and perhaps in south Italy (Apulia, Calabria, Sicily?). Migrates through Egypt and Nubia and winters in eastern Sudan and Abyssinia. On passage not very rare in Italy, rare in Tripoli, Tunisia, and Algeria. (*Æ. h. gaddi* from west Persia is evidently only a variety, occurring with white and black throat.)

ŒNANTHE PLESCHANKA

182. *Œnanthe pleschanka pleschanka* (Lepech.)—THE PIED WHEATEAR.

MOTACILLA PLESCHANKA Lepechin, Nov. Comm. Petr., xiv, p. 503, pl. 14 (1770 or 1771—Saratow on the Volga; translation in Hase, Lepechin's Reise, I, p. 229).

Saxicola pleschanka, E. V. Baxter and L. J. Rintoul, Ann. Scot. Nat. Hist., 1910, p. 2.



The Pied Wheatear (*Œnanthe p. pleschanka*). Adult male, summer.

DESCRIPTION.—*Adult male. Winter.*—Fore-head, crown, nape and hind-neck pale earth-brown, feathers with narrow paler buff tips, and white bases showing here and there especially on hind-neck; mantle and scapulars black, much concealed by long brownish-buff tips to feathers; back, rump and upper tail-coverts white with slight creamy tinge; narrow line on fore-head, lores, narrow line over eye, ear-coverts, sides of neck to shoulders, whole chin and throat extending to upper-breast black,* feathers slightly tipped creamy-white especially on lower throat; sides of breast and inner flanks (under wings) black, feathers tipped buff; rest of under-parts creamy-buff; axillaries and under wing-coverts black slightly tipped white; tail: central pair black with about basal third white, rest mostly white with about distal quarter black,† outer pair with more black, extending on outer web to about half length of feather; wing-feathers black, primaries with narrow, and secondaries with broader, tips and edgings of creamy to whitish-buff; primary-coverts as primaries; greater coverts as secondaries; median and lesser coverts with narrower tips. This plumage is

* Rarely both male and female have white throats, and the female obtained on the Isle of May was of this variety, which appears to be purely individual, though formerly treated as a distinct species—*Œ. vittata*.

† Black on inner feathers is often divided and broken up by white and sometimes reduced to a spot, but appears never to be entirely absent. Black measured from tip of feather to its farthest extent basally is in outermost feather 20-30 mm., and in 4th feather from outer a spot to 20 mm.

acquired by complete moult in June-Sept. *Summer*.—A moult usually confined to ear-coverts and chin, but occasionally extending to throat, upper-breast and sides of neck takes place from Dec. to Feb. and occasionally March. Plumage as winter, but abrasion gradually makes crown, nape and hind-neck white, and mantle, scapulars and wings nearly uniform black.

Adult female. Winter.—Crown, nape, mantle and scapulars earth-brown, feathers with narrow pale buff tips (feathers of hind-neck occasionally with a little white basally); rump and upper tail-coverts white tinged creamy; indistinct stripe from nostrils, over and behind eye creamy-buff; ear-coverts brown; chin pale buff; throat varying brown to brown-black almost entirely concealed by pale buff tips of feathers; upper-breast buffish-brown to tawny; sides of breast and flanks brown; rest of under-parts creamy-buff; axillaries and under wing-coverts black-brown edged and tipped whitish; tail as male but browner; wings and wing-coverts dark brown with longer and buffer tips and edgings than in male. *Summer*.—Moult as male. Abrasion makes upper-parts and wings more uniform brown and reveals much of black or dark brown bases of feathers of throat especially in those examples where this is prominent but even the darkest always have some pale tips to feathers.

Nestling.—(Not examined.)

Juvenile.—Upper-parts much as adult female, but more buffish-brown and each feather with whitish-buff centre towards tip, giving upper-parts spotted appearance; rump and upper tail-coverts as female; lores whitish with dark tips; ear-coverts brown with whitish-buff centres; chin, throat and breast buff to pale buff, feathers tipped dark brown; belly creamy-white; tail- and wing-feathers and greater wing-coverts as adult female; innermost greater wing-covert, median and lesser wing-coverts with rather broad and somewhat wedge-shaped creamy-white tips.

First winter. Male.—Like adult male but mantle, scapulars, wing-feathers and wing-coverts browner black and with longer and buffer edgings and tips; ear-coverts, chin and throat with longer pale tips almost concealing black (thus somewhat intermediate between adult male and female but more like former). The juvenile body-feathers, median and lesser wing-coverts, and varying number of inner greater wing-coverts and sometimes innermost secondary are moulted July-Sept., but not primary-coverts or tail nor rest of wing-feathers or greater coverts. *Summer*.—Moult as adult. Abrasion has same effect but crown seldom becomes so white as adult, mantle is always browner and wings are much browner black.

First winter and summer. Female.—Apparently like adult female.

Measurements and structure.—♂ wing 90-98 mm., tail 57-67,

tarsus 22-25, bill from skull 15.5-17 (12 measured). ♀ wing 87-95. Primaries : 1st 1-3 mm. longer or shorter than primary-coverts, 3rd and 4th longest, 2nd 4-6 mm. shorter, 5th 1-4 shorter, 6th 8-12 shorter ; 3rd to 5th emarginated outer webs. Rest of structure as in *Æ. æ. ænanthe*.

Soft parts.—Bill, legs and feet, black ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*Æ. p. cypriaca* (Cyprus) is smaller and more sandy on under-parts, in winter crown of male is blacker and upper-parts of female are darker brown. For differences of *Æ. hispanica* see "Characters" under that species.

FIELD-CHARACTERS.—Although usually haunting stony places, frequently perches on bushes and trees, often high up on latter. Constantly pounces down on to ground and flies up again to its perch in a Shrike-like fashion. Continually "bobs" its tail and is very shy and equally conspicuous. Black back of male distinguishes it from black-throated form of *Æ. hispanica* but females very difficult to identify in field. Note harsh "zach, zach." (H.F.W.)

BREEDING-HABITS.—Usually breeds in holes in river banks. but also at times under stones. *Nest*.—Few details given : dry grasses, lined roots and a feather or two. *Eggs*.—4 to 6, light greenish-blue, a few rusty spots at big end. Average size of 41, 19.3×15.1 mm. *Breeding-season*.—May, in south Russia.

FOOD.—Chiefly insects, but no precise data. Lynes found seeds, grasshopper, insects, in stomachs of *Æ. p. cypriaca*.

DISTRIBUTION.—*Scotland*.—Female, Isle of May (Forth) Oct. 19, 1909 (*ut supra*). Female, Swona (Orkneys) Nov. 1, 1916 (J. Bain, *Scot. Nat.*, 1916, p. 293).

DISTRIBUTION.—*Abroad*.—South Russia to Crimea, Dobrogea, Caucasus, Transcaspia, Turkestan, Persia, Afghanistan, west Tibet, north to south-east Siberia, and north China, also in Gilgit and north Kashmir. On passage in north-east Africa and Arabia, also casual in Italy, also on Heligoland. Replaced by smaller race in Cyprus.

ÆNANTHE ISABELLINA

183. *Ænanthe isabellina* (Cretzschm.)—THE ISABELLINE WHEATEAR.

Saxicola isabellina Cretzschmar, Atlas zu Rüppells Reise, Vögel, p. 52, pl. 34, b (1826—Nubia).

Saxicola isabellina Rüppell, Saunders, p. 21.

DESCRIPTION.—*Adult male. Winter*.—Upper-parts pale sandy-brown with more or less isabelline tinge ; feathers of lower back joining rump isabelline ; rump and upper tail-coverts white ;

lores black, feathers tipped white; line from nostrils over eye white to cream; ear-coverts pale brown to isabelline-brown chin white to pale cream; throat buffish-white to pale buff; breast



1. The Isabelline Wheatear (*Enanthe isabellina*). 2. The Greenland Wheatear (*Æ. æ. leucorroha*). Adult males. Showing difference in size of bills.

and sides darker sandy to isabelline-buff; centre of belly creamy-white; under tail-coverts pale buff; under wing-coverts and axillaries white with dusky bases; tail-feathers brown-black narrowly edged and tipped pale buff to whitish with white bases extending in central pair to about one-third but in rest to rather more than half of length*; wing-feathers black-brown, tipped, and outer webs edged, pale creamy- to isabelline-buff, narrowly on primaries more broadly on secondaries, inner webs edged white; primary-coverts as primaries; greater and median coverts brown with broad buff to pale cream edgings and tips; lesser coverts paler brown with paler sandy tips. This plumage is acquired by complete moult June-Aug. occasionally Sept. and Oct. *Summer*.—A moult usually confined to body-feathers, but sometimes involving a few lesser and median wing-coverts, and rarely one or two innermost greater coverts and secondaries, takes place Dec.-Feb. (sometimes starting Nov.). New plumage as winter.

Adult female. *Winter and summer*.—Like male and moults same.

Nestling.—(Not examined.)

Juvenile.—Like adult but upper-parts with more buffish tinge and each feather with a faint pale mesial streak and very narrow dark tip; lores dusky with whitish tips; stripe from nostril over eye dull cream very ill-defined; chin and centre of throat dull white; sides of throat and breast buff, minutely freckled dark brown, each feather having very narrow dark brown tip; rest of under-parts pale buff; tail- and wing-feathers, primary-coverts and greater wing-coverts as adult, but median and lesser coverts with pale buff wedge-shaped spots at tips.

First winter.—Like adults. The juvenile body-feathers, lesser

* Measurements of black taken as in *Æ. æ. enanthe* are: ♂ winter and summer, central feathers 33-43 (never black to base in ♂ or ♀ at any age), outermost 21-30 mm.

and median wing-coverts are moulted June-Oct., but not the greater wing-coverts, primary-coverts, wing- or tail-feathers.

Measurements and structure.—♂ wing 96-106 mm., tail 56-61, tarsus 29-33, bill from skull 19-21 (12 measured). ♀ wing 94-104. Primaries: 1st 1-6 mm. shorter than primary-coverts, 3rd and 4th longest, 2nd 2-5 shorter, 5th 3-6 shorter, 6th 8-13 shorter; 3rd and 4th, and 5th less distinctly, emarginated outer webs. Other structure as *Æ. œnanthe*.

Soft parts.—Bill, legs and feet black; iris dark brown.

CHARACTERS.—No subspecies. Sandy upper-parts and pale under-parts distinguish it from *Æ. œnanthe* but some very pale examples of females and first winter males of *Æ. œnanthe* (especially *Æ. œ. leucorrhœa*) very nearly resemble *Æ. isabellina* in colour of both upper- and under-parts, but latter may be distinguished by having whitish edges to inner webs of wing-feathers, and much more white on axillaries and under wing-coverts; usually also ear-coverts, wing-feathers and coverts of *Æ. isabellina* are not so dark, and bill is almost invariably larger.

FIELD-CHARACTERS.—Haunts plains and stony plateaux. Perches as much on bushes as on ground. Has a fluttering flight somewhat like Crested Lark. Its large size and uniform pale sandy appearance are distinctive but some very pale examples of *Æ. œ. leucorrhœa*, although having darker ear-coverts, might easily be mistaken for this species in field. Has a chirping call-note and another note of a whistling nature. (H.F.W.)

BREEDING-HABITS.—Haunts arid plains chiefly, breeding in burrows of mammals (*Lagomys*, *Spermophilus*, *Spalax*). *Nest*.—Described as fairly bulky, composed of dry grasses. *Eggs*.—5-6, pale blue, much like Common Wheatear and generally unmarked but said occasionally to be marked with dark red-brown spots. Average size of 33 eggs, 22.3×16.6 mm. *Breeding-season*.—From end March in Transcaspia, April in Palestine and Asia, and May in central Asia. Probably double brooded; eggs in Palestine in June on Mt. Hermon.

FOOD.—Probably chiefly insects, but few details available. Lynes found ants, insects and yellow seeds in stomachs.

DISTRIBUTION.—*England*.—Four. Female, Allonby (Cumberland) Nov. 11, 1887 (H. A. Macpherson, *Ibis*, 1888, p. 149). Male, Rye Harbour (Sussex) April 17, 1911 (N. F. Ticehurst, *Brit. B.*, v, p. 74). Male, Rye Harbour, March 28, 1912 (H. W. Ford-Lindsay, *op. cit.*, v, p. 328). Male, St. Leonards, May 10, 1912 (T. Parkin, *op. cit.*, vi, p. 89).

DISTRIBUTION.—*Abroad*.—From steppes of south-east Russia, Asia Minor and Syria to Turkestan, Tibet, Mongolia, east Siberia, and

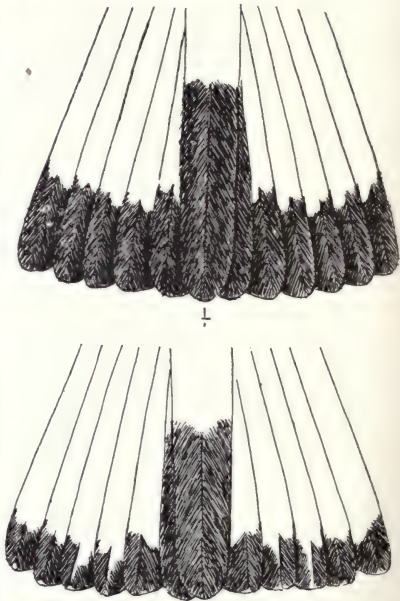
north-west China ; wintering in north-east and east Africa, south Arabia, and west India. Casual in south-east Europe, a few times observed in Tunisia and Algeria.

ŒNANTHE LEUCURA

184. *Œnanthe leucura leucura* (Gm.) — THE BLACK WHEATEAR.

Turdus leucurus Gmelin, Syst. Nat., I, ii, p. 820 (1789—Gibraltar).
Saxicola leucura (Gm.), N. F. Ticehurst, Brit. B., III, p. 289.

DESCRIPTION.—*Adult male.* *Winter.*—Whole body - plumage black somewhat glossy and with slight brownish tinge, except rump, upper and under tail-coverts which are white ; some feathers of vent and ventral end of flanks with white tips ; tail-feathers narrowly tipped white : central pair with about basal half white and distal half brown-black, rest of feathers white with black tips (black measured from tip of feather to its farthest extremity basally is in central feather 30-36 mm. and in fourth from outer 10-15 mm. the black often being divided with white) ; wing-feathers blackish-brown, outer webs very narrowly edged pale brown and inner webs edged greyish-white ; primary-coverts as primaries ; innermost secondaries and wing-coverts darker than rest of wing-feathers but not so black as body-feathers. This plumage is acquired by complete moult July to Oct. *Summer.*—No moult. Abrasion makes plumage rather more brownish.



Lower figure, The Black Wheatear (*Œnanthe l. leucura*).
 Upper figure, The North African Black Wheatear (*Œ. l. syenitica*). Males. Showing difference in amount of black in tails.

Adult female. Winter.—As male but upper-parts browner and duller not so glossy, more sooty brown-black, feathers of under-parts, ear-coverts and sides of neck broadly margined rich (somewhat rufous) brown; black tips of tail-feathers measured as in male are: central 32-37 mm. fourth from outer 10-15, sometimes divided with white. *Summer.*—Abrasion makes brown of under-parts paler.

Nestling.—(Not examined.)

Juvenile. Male.—As adult male but duller and more sooty-black, feathers with very narrow faint greyish tips. *Female.*—Still browner black than juvenile male, feathers of under-parts more uniform than adult female and with brown tips very small and scarcely noticeable except on belly where they are more distinct.

First winter. Male and female.—Like the adults but wing-feathers and primary-coverts and unmoulted outer greater wing-coverts browner. In male body-feathers are also more tinged with brown than in adult. The juvenile body-feathers, lesser and median wing-coverts and a varying number of greater coverts are moulted June-Oct., but not primary-coverts, wing- or tail-feathers.

Measurements and structure.—♂ wing 96-100 mm., tail 64-71, tarsus 27-28.5, bill from skull 20-22 (12 measured). ♀ wing 91-96. Primaries: 1st 6-11 mm. longer than primary-coverts, 3rd to 5th longest, 2nd 6-9 mm. shorter, 6th 2-5 shorter; 3rd to 6th emarginated outer webs.

Soft parts.—Bill, legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *Æ. l. syenitica* see under that form; *Æ. l. riggenbachi* (Rio de Oro) is stated to have still more black on tail than *Æ. l. syenitica*. Uniform black or dark brown of body-plumage distinguishes it from other British Wheatears.

FIELD-CHARACTERS.—Large size, looking as big as a Blackbird, generally black or blackish-brown, except for white rump and white on tail, form characters which readily distinguish both sexes and juveniles from any other bird. Haunts rocky gorges, cliffs, etc., and has habits of other Wheatears, frequently spreading tail and singing during short flights, and is as a rule a bold and lively bird, challenging attention. (F.C.R.J.)

BREEDING-HABITS.—Nests in crevices and holes in rocks, walls and caves, generally placing a wall or breastwork of loose stones in front of nest, sometimes in considerable quantities. *Nest.*—Built of grasses and dead plants, lined with feathers, wool, hair, etc. *Eggs.*—4 to 6, bluish-white with rusty-red spots, generally forming a zone at big end. Average of 62 eggs, 24.5×17.8 mm. *Breeding-season.*—April and May. *Incubation.*—Chiefly at any rate by hen.

FOOD.—Insects, but no detailed information available.

DISTRIBUTION.—*England.*—Male and female near Rye Harbour (Sussex) seen Aug. 31, 1909, and shot Sept. 2 and 16 respectively (*ut supra*). Male seen (subspecies unknown) Fair Isle (Shetlands) Sept. 28-30, 1912 (W. E. Clarke and Duchess of Bedford, *Scot. Nat.*, 1913, p. 26).

DISTRIBUTION.—*Abroad.*—Portugal and Spain, Riviera, and, apparently, in Sicily, but not in Greece. Replaced by *Æ. l. syenitica* in north-west Africa.

185. *Ænanthe leucura syenitica* (Heugl.).—THE NORTH AFRICAN BLACK WHEATEAR.

SAXICOLA SYENITICA Heuglin, Journ. f. Orn., 1869, p. 155 (El-Kab in Upper Egypt. Type examined by Hartert).

Ænanthe leucura syenitica, T. Parkin, Brit. B., ix, p. 200.

DESCRIPTION.—*Adult male.*—Like that of *Æ. l. leucura* but considerably more tinged with brown, especially on crown, fore-part of which in first winter and summer birds is often brown; feathers of vent and ventral end of flanks with more white at tips; tail-feathers with more black at tips than in *Æ. l. leucura* (measured as in *Æ. l. leucura* black is in central feathers 34-43 mm., in fourth from outer 12-18 mm., never divided with white as is frequently the case in *Æ. l. leucura*).

Adult female.—Upper-parts dark brown not brown-black as in *Æ. l. leucura*; fore-part of crown paler brown than rest of upper-parts; under-parts usually paler brown than in *Æ. l. leucura* and belly sometimes greyish; feathers of vent and ventral end of flanks with more white at tips; black on tail-feathers measured as in *Æ. l. leucura* is in central feathers 34-40 mm. and in fourth from outer 13-18 mm., never divided with white as is sometimes the case in *Æ. l. leucura*.

Nestling.—(Not examined.)

Juvenile.—Except for amount of black on tail, as *Æ. l. leucura*, but female with feathers of under-parts more distinctly tipped pale brown but not so much as in adult female.

Measurements.—♂ wing 92-102 mm., tail 63-68, tarsus 26-28.5, bill from skull 19-22 (12 measured). ♀ wing 89-95.

BREEDING-HABITS.—Nests under boulders, in fissures in cliffs or holes in steep mud-banks and builds a sloping breastwall of flakes of stone, each about 2 inches across, on outside of nest.

Nest.—Carelessly built of dead vegetable matter and profusely lined with hair and feathers. *Eggs.*—3 to 5, white with a bluish tinge, and sometimes boldly marked with sienna spots, often forming zone at big end, sometimes only sparingly. Average of 60 eggs, 23.4 × 17.3 mm. *Breeding-season.*—March and April.

Incubation.—Chiefly at any rate by hen. Probably two broods.

FOOD.—Insects, probably chiefly orthoptera and coleoptera, also diptera, but little information available.

DISTRIBUTION.—*England*.—One. Male, Pevensey Sluice (Sussex), June 7th, 1915 (*ut supra*).

DISTRIBUTION. — *Abroad*. — Morocco, Algeria, Tunisia, Tripoli, chiefly south of Atlas, but in places nearly to Mediterranean. Only the type known from Egypt, so far.

Genus SAXICOLA Bechst.*

SAXICOLA Bechstein, Orn. Taschenb., I, p. 216 (1802—Type by subsequent designation, Swainson 1827: *S. rubicola*.—*Pratincola* auct.)

Appears to be related to *Enanthe* but resembles Flycatchers in some ways. Bill short and strong, rictal and nasal bristles well developed, former longer than in *Enanthe*. First primary, except in *S. rubetra*, longer than primary-coverts, wings not as long as in *Enanthe*, tail shorter. Sheath of tarsus undivided in front. Sexes different, juvenile more spotted than adults. Nests open, eggs blue, mostly spotted.

Key to species of genus SAXICOLA.

- | | | |
|---|---|-----------------------------|
| { | First primary not distinctly longer than primary-coverts, 5th distinctly shorter than 3rd | <i>S. rubetra</i> , p. 449 |
| | First primary much longer than primary-coverts, 5th not distinctly shorter than 3rd | <i>S. torquata</i> , p. 454 |

SAXICOLA RUBETRA

186. *Saxicola rubetra rubetra* (L.)—THE WHINCHAT.

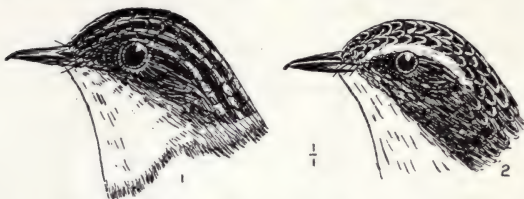
MOTACILLA RUBETRA Linnæus, Syst. Nat., ed. x, i, p. 186 (1758—Europe. Restricted typical locality: Sweden).

Pratincola rubetra (Linnæus), Yarrell, I, p. 344; Saunders, p. 27.

DESCRIPTION (Plate 16).—*Adult male. Winter*.—Whole head black-brown, feathers edged and narrowly tipped rufous-brown; nape same but edgings of feathers more buffish-brown; mantle and scapulars same but feathers with broader rufous-brown edgings and small whitish tips; rump and upper tail-coverts same but with black reduced to mesial streak and subterminal mark; broad stripe

* The name *Pratincola* dates from Koch, 1816, but cannot be used because Schrank introduced it for the *Pratincoles* in 1798. (See note under *Enanthe*.)—E.H.

from nostrils, over and behind eye extending to nape pale cream ; lores and ear-coverts brown to rufous-brown ; chin and sides of throat whitish with a line of dark brown feathers forming a some-



1. The British Stonechat (*Saxicola t. hibernans*). 2. The Whinchat (*S. r. rubetra*).
Adult females.

what ill-defined moustachial stripe ; throat buff ; breast and flanks deeper rufous-buff, feathers with pale buff tips and those of breast with varying number of black-brown mesial streaks and spots (sometimes altogether absent) ; belly and under tail-coverts pale buff ; axillaries buffish-white to white with greyish-black bases and inner webs ; under wing-coverts greyish-black with buffish-white to white tips ; tail : central pair with basal quarter, and rest with basal half, white, distal portions brown-black with pale buff edgings and tips and most of outer web of outer pair whitish ; primaries brown-black, outer webs and tips narrowly edged buff to pale buff, inner webs edged white or pale buff extending at extreme base to outer webs but concealed by primary-coverts except in 6th to 9th primaries in which it usually shows beyond coverts ; secondaries same but more broadly edged on outer webs and only innermost three with white at base of outer webs ; primary-coverts basal half or more white or buffish-white, distal part brown-black edged and tipped pale buff ; greater wing-coverts black narrowly edged and tipped pale buff, innermost four white with varying amount of black, edged buff at tips and on outer webs ; median and lesser coverts black with narrow buff edges and tips, about inner half with varying amount of white and some of innermost usually entirely white. This plumage is acquired by complete moult July-Sept. *Summer*.—A moult involving the body-feathers and usually all lesser wing-coverts but not always the outermost, median coverts (except the outermost), three or four innermost greater coverts, exceptionally two or three innermost secondaries, but not rest of coverts or wing-feathers nor any primary-coverts or tail-feathers takes place Feb.-Mar. Upper-parts as winter ; superciliary stripe broad and white ; moustachial stripe blacker and more defined ; chin and line down sides of throat, broadening to a patch at sides of base of neck, pure white ; throat,

breast and flanks bright uniform chestnut-buff without any dark streaks or spots ; new inner wing-coverts mostly pure white (thus making larger white wing-spot) new outer lesser coverts black with very narrow whitish tips. Abrasion makes upper- and under-parts paler both in winter and summer plumage and in winter streaks on breast become prominent by wear, while brown edgings and tips gradually wear off wing-coverts, which become almost uniform black in summer.

Adult female. Winter.—Like adult male but innermost greater coverts with rather less white at base than in adult male but as in male varying in amount ; inner median and lesser coverts with decidedly less white than in male and apparently never wholly white as some feathers often are in male, some innermost feathers of all the series occasionally with whitish mesial streaks. Moults as in male. *Summer.*—Moults as in male. Plumage as in adult male but superciliary stripe not quite so distinct ; throat, breast and flanks usually rather paler and sometimes with one or two dark spots ; moustachial streak and ear-coverts usually rather browner and less black ; with less white as a whole on inner feathers of all series of wing-coverts thus forming a smaller wing-patch but owing to variable amount of white in individuals of both sexes some examples difficult to distinguish.

Nestling.—Down dark smoke-grey, paler at base, fairly long and plentiful. Distribution, inner supra-orbital, occipital, spinal and humeral : lower portion of spinal without down. Mouth inside pale orange shading to chrome-yellow, no spots ; externally flanges very pale yellow shading to ivory-white.

Juvenile.—Crown black-brown with some rufous-brown marks and each feather with narrow mesial buff or rufous-buff streak ; nape rufous-brown, feathers with pale buff tips ; mantle and scapulars brown-black, feathers with broad rufous edgings and pale buff mesial streaks and tips ; back and rump mottled rufous-buff and black-brown ; upper tail-coverts rufous with buff tips and blackish subterminal marks ; superciliary stripe pale buff much less well defined than in adult ; ear-coverts rufous edged and tipped blackish ; chin and throat pale buff faintly speckled dark brown ; breast buff and rufous-buff, feathers narrowly edged dark brown ; belly and under tail-coverts and under wing-coverts and axillaries pale buff ; tail- and wing-feathers as adult but bases of outer webs of 6th to 9th primaries buff not white and innermost secondaries with considerably less white at base ; primary-coverts black narrowly edged and tipped buff with varying amount of white or pale buff at base ; greater coverts brown-black edged and tipped rufous, innermost one or two feathers with pale buff mesial streak broadening at tip ; median and lesser coverts black-brown with mesial streaks and tips darker and more rufous on outer feathers, paler buff on inner feathers. N.B.—More rufous

not so black on upper-parts and generally paler under-parts than juvenile Stonechat and with superciliary stripe.

First winter. Male.—Like adult male but primary-coverts as in juvenile either with no white or only bases white; outer greater wing-coverts browner black and with broader buff edgings than in adult; inner greater wing-coverts with less white at base and sometimes unmoulted juvenile feathers with mesial white streaks, inner median and lesser coverts with considerably less white and none of the feathers entirely white; primaries and secondaries as juvenile. The juvenile body-feathers, lesser and median wing-coverts and usually two or three innermost greater wing-coverts are moulted June-Sept. but not rest of greater wing-coverts and not primary-coverts, wing- or tail-feathers. *Female.*—As adult female but primary-coverts and bases of inner primaries and inner secondaries with less white as in juvenile; inner greater coverts usually without, but sometimes one or two feathers with a little, white at base; inner median and lesser coverts with dull white tips and often with whitish shaft-streaks.

First summer. Male and female.—Moult as in adults. Like adults but primary-coverts, inner primaries and inner secondaries as in juvenile and first winter with much less white; outer unmoulted wing-coverts (especially greater) browner and less black than in adult.

Measurements and structure.—♂ wing 74-81 mm., tail 43-48, tarsus 21-24, bill from skull 13.5-15 (12 measured). ♀ wing 73-80. Primaries: 1st equal to, or 1-2 mm. longer or shorter than, primary-coverts, 3rd and 4th longest, 5th 2-3 mm. shorter, 2nd 2-4 shorter, 6th 5-7 shorter; 3rd to 5th emarginated outer webs. Rest of structure as in Stonechat but tips of secondaries rather squarer.

Soft parts.—Bill, legs and feet black; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*S. r. spatzi* (Dalmatia) has edgings of feathers of upper-parts more golden- and less rufous-brown; *S. r. noskæ* (Caucasus) is still paler and *S. r. margaretae* (west Siberia) will probably be found to be same as *S. r. noskæ*. For differences of Stonechat see under that species.

FIELD-CHARACTERS.—More catholic in habitat than Stonechat, frequenting lowland pastures and water meadows as well as mountain slopes and furze-clad wastes. In behaviour the two have much in common, but exhibit well marked differences in appearance. More slender in form, Whinchat has streaked upper-parts, prominent eye-stripe, white in male, buff in female; breast is buff not red; and white at base of tail is more conspicuous at all ages. Song, a short, hurried, and frequently repeated warble, akin to Wheatear's rather than Stonechat's, but call-note is like



(HALF NATURAL SIZE.)

JUVENILES of 1, The Wheatear (*Enanthe æ. ænanthe*). 2, The Whinchat (*S. r. rubetra*). 3, The British Stonechat (*Saxicola t. hibernans*). 4, The Redstart (*Phœnicurus ph. phœnicurus*). 5, The Nightingale (*Luscinia m. megarhyncha*). 6, The British Robin (*Erithacus r. melophilus*).

[Face p. 452.]

latter's, a clicking " 'tza." Alarm-note, an insistent "u-tic, u-tic-tic."

BREEDING-HABITS.—Usually nests on ground in mowing grass in meadows, or at foot of low bush on hillside. *Nest*.—Built of dry grasses, with moss in foundation, lined with finer bents and hair. *Eggs*.—5 or more often 6, rarely 7; deep bluish-green, generally with numerous very fine speckles of rusty-brown chiefly towards big end. Average of 100 eggs, 18.6×14.3 mm. *Breeding-season*.—From latter part of May and early June. *Incubation*.—13-14 days, apparently by hen only. Said by Saunders to be double brooded, but this seems very doubtful.

FOOD.—Insects, including coleoptera (*Parnus*, *Haltica*, *Harpalus*, weevils, etc.); diptera, larvæ of lepidoptera, orthoptera (*Forficula*), etc. Also spiders and earthworms, and Saunders adds small mollusca.

DISTRIBUTION.—*Great Britain*.—Summer-resident, somewhat local, but widely distributed and in many parts very numerous. Rare Cornwall, very local Orkneys, a rarely observed migrant only in Shetlands; spring and autumn migrant Fair Isle; breeds very sparingly O. Hebrides. *Ireland*.—Breeds locally throughout Ulster and in north-east Mayo, Leitrim, Sligo, Roscommon and Longford, scarcer in Louth, Dublin, Wicklow, Clare and Cork: elsewhere a rare migrant. Winters on rare occasions both Great Britain and Ireland.

MIGRATIONS.—*British Isles*.—Early arrivals of summer-residents begin end of first week April (early dates Berks. Mar. 6, 1919; Wilts. Mar. 13, 1913, Mar. 15, 23, 26, 29); main arrival third week April to fourth week May. Passage-migration by east coast route (Channel to northern isles) first few days of May to end first week June. Summer-residents begin to move south in Scotland second week July, at end of month in north England and farther south during Aug. Emigration from south coast fourth week Aug. to fourth week Sept. Passage-movements east coast (northern isles to Channel) mid-Aug. to end Sept. and stragglers in most years to second week Oct. (late dates, Fair Isle, Oct. 15, 1913; Inner Dowsing Lt.-v. (Lincs.), Oct. 16, 1912; Cornwall, Oct. 22, 1912; Blackwater Bank Lt.-v. (Wexford) Nov. 9, 1890). Irish summer-residents apparently arrive and depart mainly by south-east and east coasts.

DISTRIBUTION.—*Abroad*.—Breeding in Europe, from about lat. 70° north in Scandinavia to Mediterranean (in Greece and south and mid-Spain only on passage), wintering in tropical Africa. Replaced by paler forms in south Dalmatia, in the Caucasus (perhaps also parts of Persia and Asia Minor), and west Siberia.

SAXICOLA TORQUATA

187. *Saxicola torquata hibernans* (Hart.)—THE BRITISH STONECHAT.

PRATINCOLA TORQUATA HIBERNANS Hartert, Journ. f. Orn., 1910, p. 173 (England).

Pratincola rubicola (Linnæus), Yarrell, I, p. 339; Saunders, p. 29;

P. t. hibernans, Hartert, Brit. B., III, p. 315.

DESCRIPTION (Plate 16).—*Adult*

male. Winter.—Crown, mantle and scapulars brown and black, feathers being jet-black with long reddish-brown fringes; rump more uniform reddish-brown; upper tail-coverts white with black pear-shaped centres and rufous tips concealing the white; lores, ear-coverts, chin and throat black, feathers with buff tips sometimes almost concealing black; at base of sides of neck patch of white extending towards back of neck to shoulder much concealed towards shoulder

by black and rufous tips to feathers; breast, sides of belly and flanks chestnut, feathers with narrow buff fringes; centre of belly and under tail-coverts pale buff; under wing-coverts and axillaries black, fringed and tipped white; tail-feathers brown-black with narrow buff fringes and tips; wing-feathers brown-black, inner webs edged dull white, outer webs of primaries narrowly edged buff and of secondaries more broadly edged rufous-buff, innermost secondary with basal half, and two next with basal third of outer web white; primary-coverts brown-black with buffish-white fringes and tips; varying number of inner greater wing-coverts white, next outwards black and white, rest black with rufous-buff edgings and tips; inner median coverts white with black bases, rest black with buff tips; lesser coverts same but innermost with only tips white. This plumage is acquired by complete moult in Aug.-Sept. *Summer.*—No moult. Abrasion of tips and fringes of feathers gradually causes striking change with considerable individual variation according to amount of wear; throat and upper-parts becoming jet-black with few remains of brown edgings to feathers; upper tail-coverts black and white; white patches on sides of neck larger and pure white; breast brighter chestnut; centre of belly and under tail-coverts whiter; axillaries black with little white remaining; wing-coverts jet-black with white patch formed by inner ones showing larger.



The British Stonechat (*Saxicola t. hibernans*). Adult male, summer.

Adult female. Winter.—Upper-parts much like male but black not so intense ; upper tail-coverts with no white ; lores, ear-coverts and cheeks brown with blackish bases ; chin buff ; throat same but with black of proximal portion of feathers not entirely concealed ; sides of neck whitish-buff tipped brownish and spotted and streaked black ; breast and belly as male but not so bright ; under wing-coverts and axillaries with buff to whitish-buff tips and fringes ; tail- and wing-feathers as in male but innermost secondary with much less white and next two with only a spot of pale buff at bases of outer webs ; wing-coverts as in male but with much less white on inner ones. Moults as in male. *Summer.*—Effect of abrasion less marked than in male ; upper-parts become blacker but brown edgings to feathers, though narrower, remain ; lower part of throat becomes partially black and neck patches larger and more whitish and white wing-patch more distinct ; breast becomes rather brighter.

Nestling.—Down brownish-grey, fairly long not very plentiful. Distribution, inner supra-orbital, occipital, spinal and humeral. Mouth inside yellow, no spots ; externally flanges whitish-yellow.

Juvenile. Male.—Crown black, each feather with narrow mesial buff streak on distal portion ; nape same but with broader and more wedge-shaped streaks ; mantle, scapulars and back as nape, but with rufous markings on each side of buff wedge ; feathers of rump and upper tail-coverts with long rufous tips and no white on upper tail-coverts ; ear-coverts brown-black with mesial buff streaks ; chin, throat and sides of neck greyish-buff speckled black ; breast more rufous-buff with larger black markings ; belly and under tail-coverts buff ; flanks same but sparsely marked black ; under wing-coverts and axillaries buff with blackish bases ; tail and wing-feathers and primary-coverts as adult but three innermost secondaries with rather less white ; inner greater wing-coverts white with buff tips and varying amount of black markings, rest as adult ; innermost median and lesser wing-coverts with whitish-buff wedge-shaped tips, rest with paler buff tips than in adult. *Female.*—Like male but three innermost secondaries without any white, but with small buff spot at base of outer webs, innermost greater wing-coverts not white but like the others, except for broader whitish-buff tips.

First winter. Male and female.—Like adult winter. The juvenile body-feathers, lesser, median and greater wing-coverts and three innermost secondaries are moulted in Aug.-Sept., but not rest of wing-feathers nor primary-coverts and tail.

Measurements and structure.—♂ wing 65-68 mm., tail 46-49, tarsus 22-24, bill from skull 13-15 (12 measured). ♀ wing 63-67. Primaries : 1st 5-9 mm. longer than primary-coverts, 3rd to 5th equal and longest, 2nd 5-7 shorter, 6th 1-2 shorter ; 3rd to 6th emarginated outer webs. Secondaries about equal to 10th primary,

tips rounded. Tail square but outermost feathers shorter than rest, 12 feathers, tips somewhat sharply sloped off. Bill fairly strong, somewhat flat at base, tip of upper mandible slightly curved and projecting beyond lower. Nostrils partially covered by membrane and somewhat concealed by short feathers. A few nasal and rictal bristles, the latter stiff.

Soft parts.—Bill, legs and feet black; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*S. t. rubicola* (Europe) has paler brown fringes to feathers of upper-parts and rather paler under-parts; *S. t. maura* (Caucasus, Persia) is much paler, has white rump and upper tail-coverts and basal half of tail white, also more white on inner secondaries; *S. t. stejnegeri* (east Siberia, north China, Japan) has larger bill and only basal quarter of tail-feathers white; *S. t. przewalskii* (east Turkestan) much like last but larger. For differences of *S. t. indica* see under that form. Black or blackish throat, dark upper-parts and want of clearly defined eye-stripe, measurements and wing-formula distinguish Stonechat from Whinchat.

FIELD-CHARACTERS.—Characteristic of heaths and wastes, where it moves restlessly about the furze or perches with fussy and assertive alarm-notes, "hweet-chat, hweet-chat," and vibrating tail on top-most twig of furze-bush or clump of ling. In autumn and winter often hunts for food in very different surroundings, e.g., reed-beds and hedgerows. Male recognized by black head, broad white collar and conspicuous white wing-patch. Female and young duller in colour and more like Whinchat, but lack eye-stripe and have reddish, not buff breasts. Song a thin strain, not unlike a Hedge-Sparrow's.

BREEDING-HABITS.—Haunts gorse-grown commons and especially country near sea, railway cuttings, etc. *Nest*.—Well concealed, usually at foot of a clump of gorse, or thick bush, and resting on ground, with sometimes a run leading up to it. Built of moss and grasses, sometimes bits of dead thistle, neatly lined with bents, hair, and sometimes a few feathers. *Eggs*.—5 or 6, rarely 7, decidedly paler than Whinchat's and much greener in tone, often with a definite band of fine rusty specks or thickly freckled with them. Average size of 100 British eggs, 18.8×14.4 mm. *Breeding-season*.—First eggs are found late in March and early in April, but also in May and even June. Double brooded. *Incubation*.—14 days (Bond); apparently by hen alone.

FOOD.—Chiefly insects: coleoptera (*Tachyporus*, *Stenus*, *Notiophilus*, *Helophorus*, weevils, rove-beetles, etc.) and their larvæ; lepidoptera and larvæ (including larvæ of *Noctua* and *Arctia*); diptera and larvæ, larvæ of hymenoptera, orthoptera (*Forficula*). Also spiders, worms and their eggs. Colthrup records young fed on chalk-hill

blue butterfly (imagines) and E. L. Turner small lizards. Seeds also occasionally taken.

DISTRIBUTION.—*British Isles*.—Resident, widely distributed, but local and uncertain, often abandoning a locality after a few years. Most numerous in coastal regions. Very local in midland plain of England, in Pennines, and in south-west Scotland, but more common northwards and eastwards in Scotland. Breeds sparingly O. Hebrides, rarely Orkneys, and only very rare visitor to Shetlands, but to Fair Isle regular in spring and rare in autumn.

MIGRATIONS.—*British Isles*.—Though partly resident as a species, there is considerable evidence that individuals seen at other seasons in most areas are not those that breed there in summer. In many districts, especially inland, it is only a summer-resident. Southward movements throughout country and concentration in neighbourhood of south coast begin second week Aug. and emigration a week or two later continuing at intervals to beginning Nov. Irish summer-residents emigrate, at any rate partly, Oct. and early Nov. Evidence of passage-movements, probably of Scottish breeding-birds down west coast (western isles to Solway) and east coast (eastern Orkneys to Kent) second week Sept. to third week Oct. Weather-movements in all parts may occur later. Return immigration south coast and passage northwards inland mid-Feb. to second week April; summer-residents in northernmost areas travel to some extent by coastal routes, we tern (Scillies to western isles) mid-Feb. to first week May and east and north coasts Ireland mid-Feb. to first week April, eastern (Kent to eastern Orkneys and Fair Isle) end Feb. to fourth week May. Fair Isle birds may belong to Continental race *S. t. rubicola* (L.) but their destination is unknown.

DISTRIBUTION.—*Abroad*.—Breeding bird of Portugal is not separable from British form.

188. *Saxicola torquata indica* (Blyth)—THE INDIAN STONECHAT.

PRATINCOLA INDICA Blyth, Journ. As. Soc. Bengal, xvi, p. 129 (1847—India).

Pratincola maura (nec Pallas), Saunders, Brit. B., I, p. 7.

DESCRIPTION.—*Adult male. Winter*.—Like that of *S. t. hibernans* but upper-parts with longer and paler brown tips to feathers than in either *S. t. hibernans* or *S. t. rubicola*; feathers of rump and upper tail-coverts white with rufous-buff tips; under-parts rather paler than in *S. t. rubicola*; under wing-coverts and axillaries with narrower white tips; tail-feathers with rather less than basal quarter white (*S. t. maura* has tail-feathers nearly half white); edgings of outer webs of wing-feathers paler and of inner webs

whiter, more white on outer webs of three innermost secondaries and some white on fourth and sometimes on fifth; considerably more white on inner feathers of all wing-coverts.* Moult as in *S. t. hibernans* commencing in July. *Summer*.—Abrasion has same effect as in *S. t. hibernans* and makes white rump and large white wing-patch conspicuous, while belly becomes white and axillaries and under wing-coverts almost uniform black.

Adult female. Winter.—Upper-parts much paler brown than *S. t. hibernans*; rump and upper tail-coverts whitish-buff, feathers with rufous-buff tips; under-parts much paler than in *S. t. hibernans*; no white at base of tail-feathers as in male (♀ *S. t. maura* has about as much white at base of tail-feathers as ♂ *S. t. indica*); edgings of wing-feathers and coverts much paler than in *S. t. hibernans* and rather more white or pale buff at base of innermost secondaries.

Nestling.—(Not examined.)

Juvenile.—Upper-parts paler than in *S. t. hibernans*; feathers of rump and upper tail-coverts buffish-white at base and with sandy-buff tips; under-parts rather paler; in males base of tail-feathers white and white at base of four innermost secondaries.

First winter.—As adults. Moult as in *S. t. hibernans* but four innermost secondaries are moulted.

Measurements and structure.—♂ wing 67-71 mm., tail 47-51, tarsus 21-23, bill from skull 12.5-14 (12 measured). ♀ wing 66-70. Primaries and structure as in *S. t. hibernans*.

Soft parts.—Bill, legs and feet black; iris dark brown.

BREEDING-HABITS.—Generally breeds in loose stone-walls, low thorny bush or thick grass tussock close to ground. *Nest*.—Built of grass mixed with moss, lined fine grass, hair and sometimes a few feathers. *Eggs*.—4-5, rarely 6. Similar in type to those of British Stonechat. Average of 23 eggs, 17.7×13.78 . *Breeding-season*.—Variable, probably double brooded. Eggs from mid-March to June.

FOOD.—Probably very similar to British Stonechat; chiefly insects but no exact details available.

DISTRIBUTION.—*England*—Male near Cley (Norfolk) Sept. 2, 1904 (Saunders, *Bull. B.O.C.*, xvi, p. 10, and *Brit. B.* i, p. 7; cf. Hartert, *Vögl. pal. Fauna*, i, p. 708). One Isle of May (Forth) Oct. 10, 1913 (E. V. Baxter and L. J. Rintoul, *Scot. Nat.*, 1913, pp. 273-4).

DISTRIBUTION.—*Abroad*.—West Siberia, Russian Turkestan to south Ural and western Himalayas, wintering in India generally. Represented by *S. t. hibernans* in British Isles, by *S. t. rubicola** in continental Europe from south Sweden to Mediterranean, east

* This form has not yet been proved to occur in the British Isles so far as we are aware.

to south Russia and north-west Africa, and passing through northern Sahara on migration, by *S. t. maura* in Caucasus, and by other forms in various parts of Asia and Africa.

Genus PHÆNICURUS Forst.

PHÆNICURUS Forster, Synopt. Cat. Brit. B., pp. 16, 53 (1817—Type: *Sylvia phœnicurus* by monotypy and tautonymy). *Ruticilla* of many authors.

Bill slender and pointed, nostrils in front of the frontal feathering, rictal bristles distinct. Tail slightly rounded, 12 rectrices. Rump and tail chiefly brownish-red. 1st primary longer than primary-coverts, 2nd much shorter than 3rd, 4th and 5th; secondaries much shorter than primaries. Plumage soft. Sexes different, young spotted. Nests as a rule in holes, eggs blue or white, nearly always unspotted. Palearctic region to tropical Asia and Africa.

Key to species of genus PHÆNICURUS.

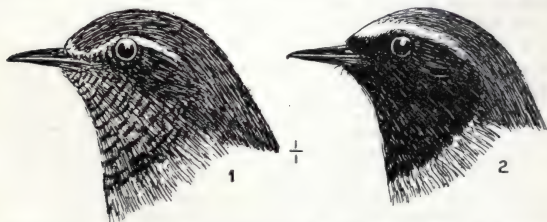
- | | | |
|---|--|--------------------------------|
| { | 2nd primary equal to 7th or shorter, 3rd to 6th
attenuated on outer web | <i>Ph. ochrurus</i> , p. 463 |
| | 2nd primary equal to 6th or longer, 3rd to 5th
attenuated on outer web | <i>Ph. phœnicurus</i> , p. 459 |

PHÆNICURUS PHÆNICURUS

189. *Phœnicurus phœnicurus phœnicurus* (L.)—THE RED-START.

MOTACILLA PHÆNICURUS Linnaeus, Syst. Nat., ed. x, i, p. 187 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Ruticilla phœnicurus (Linnaeus), Yarrell, I, p. 329; Saunders, p. 31.



The Redstart (*Phœnicurus ph. phœnicurus*). Male adult. 1, Winter; 2, Summer.

DESCRIPTION (Plate 16).—*Adult male. Winter.*—Narrow band across fore-head joining lores black, rest of fore-head and fore-part of crown french-grey tipped brown, feathers with white bases mostly con-

cealed but showing somewhat on fore-head and especially at sides of crown, over and behind eye and thus forming a superciliary stripe; rest of crown, nape, mantle and scapulars french-grey, feathers tipped reddish-brown much concealing the grey, especially on mantle and scapulars; rump and upper tail-coverts bright chestnut (latter rather darker); lores black; chin and ear-coverts same, but some feathers tipped white; whole throat extending to sides of neck black, feathers tipped white; breast and flanks pale chestnut, feathers tipped white; belly white; under tail-coverts rufous-buff; under wing-coverts and axillaries pale chestnut; tail: central pair black-brown with bases and most of outer webs chestnut, rest chestnut, sometimes with some dark brown at tips of outer webs; primaries and secondaries black-brown, outer webs narrowly edged brown on outer, and buffish-white on inner, webs, innermost secondaries more broadly edged and tipped pale rufous-brown, often with a little french-grey on outer webs; primary-coverts black-brown with narrow grey-brown edgings and tips; greater coverts same with broader and greyer edgings and more rufous tips; median coverts with more distinctly french-grey edgings and rufous tips; lesser coverts tipped and edged french-grey. This plumage is acquired by complete moult from July to Sept. *Summer*.—No moult. Abrasion of tips of feathers gradually causes marked changes. Fore-head and varying amount of fore-part of crown become pure white; rest of crown, mantle and scapulars pure french-grey; whole throat, ear-coverts and sides of neck black; breast and flanks uniform chestnut; wing-feathers and greater coverts paler brown and edgings mostly worn off; median coverts fringed grey with no rufous tips and lesser coverts greyer.

Adult female. Winter.—Fore-head, crown, mantle and scapulars brown, feathers of fore-head with concealed creamy-white spots at their bases; rump and upper tail-coverts as male but not quite so bright; lores, ear-coverts, and feathers round eyes buff-brown; chin and whole throat pale buff to whitish, mottled brown especially on sides of throat; breast and flanks orange-buff to orange-brown (the orange tint varying in intensity), feathers tipped whitish; belly dull white; under tail-coverts, under wing-coverts and axillaries buff; tail as male; wing-feathers and primary-coverts as male but rather browner and with no grey on inner secondaries; greater and median coverts dark brown with rufous-brown edgings and tips; lesser coverts same but with long grey-brown tips. *Summer*.—Abrasion causes no marked changes as in male, but fore-head often shows some creamy-white, crown and mantle become greyer-brown, breast and flanks brighter owing to wearing off of whitish tips of feathers. N.B.—Exceptionally adult females have feathers of throat black with white tips, a good deal of white on fore-head and are greyer on upper-parts

and wing-coverts than normal females and thus approach somewhat to plumage of first winter male.

Nesting.—Down dark grey, fairly long. Distribution, inner and outer supra-orbital, occipital, spinal and humeral. Mouth inside pale orange, no spots; externally flanges yellowish-white.

Juvenile. Male and female.—Feathers of fore-head, crown, nape, mantle and scapulars with grey bases (mostly concealed) brown edges and blackish tips with pale ochreous-buff spots above the black; rump chestnut-buff, feathers narrowly tipped black; upper tail-coverts as adult; sides of neck and under-parts pale buff to dull white, feathers tipped dark brown, centre of belly paler and with very little brown on tips; under tail-coverts pale buff; under wing-coverts pale buff to whitish; axillaries darker buff; tail and wing-feathers and primary-coverts as adult female; greater coverts as adult female but edgings and tips usually rather paler and more conspicuous; median and lesser coverts dark brown with wedge-shaped tips buff narrowly edged with blackish.

First winter. Male.—Like adult male but feathers of upper-parts with broader brown tips, which conceal black of fore-head band and white of fore-head and most of grey of crown, mantle and scapulars; white of superciliary stripe much concealed by brown tips; black of lores, chin, throat and ear-coverts much concealed (sometimes almost entirely concealed) by whitish tips; primaries, secondaries, primary-coverts and greater coverts as adult female but innermost one or two greater coverts black with greyer tips as in adult male; median and lesser coverts as adult male but with less french-grey. The juvenile body-feathers, lesser and median wing-coverts and innermost two (sometimes only one) greater coverts are moulted July-Sept., but not remiges, rectrices, primary-coverts nor rest of greater wing-coverts.

Summer.—No moult. Abrasion causes same changes as in adult male but french-grey of crown, mantle and scapulars never becomes so pure, part of brown tips of feathers remaining, black of chin and throat also has remains of whitish tips, wing-feathers are browner and unmoulted greater coverts have no french-grey.

First winter and summer. Female.—Not definitely distinguishable from adult female.

Measurements and structure.—♂ wing 74-82 mm., tail 51-58, tarsus 20-23, bill from skull 14-15 (12 measured). ♀ wing 71-79. Primaries: 1st 2-8 mm. longer than primary-coverts, 3rd and 4th longest, 5th 1-3 shorter, 2nd 7-10 shorter, 6th 6-9 shorter; 3rd to 5th emarginated outer webs. Secondaries shorter than 10th primary, tips somewhat square. Tail fairly square but outermost feathers shorter than rest, 12 feathers, tips sloped off. Bill fine but flattish at base, tip of upper mandible slightly curved and projecting beyond lower. Nostrils partially covered by membrane but not by feathers. Some fine nasal and rectal bristles.

Soft parts.—Bill, legs and feet black; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*Ph. ph. algeriensis* (Algeria) has 6th primary longer than 2nd, but this is occasionally so in typical form and *algeriensis* appears a questionable form of which I have examined only 2 examples; *Ph. ph. mesoleuca* (Caucasus, Asia Minor, Persia) male has outer webs of primaries narrowly, and of secondaries broadly, edged white. Chestnut rump and tail distinguish Redstart from other species except Black Redstart which is always much darker.

FIELD-CHARACTERS.—Bright chestnut-red tail, very conspicuous in flight, distinguishes Redstarts from all other British birds. Pure white fore-head and copper-red breast of adult male Common Redstart contrast with black breast and broad white wing-patch of Black Redstart. Females are more alike, but Black Redstart is darker, throat, breast and flanks being mouse-grey, whereas Common Redstart has white throat and abdomen and rufous-buff flanks. Juvenile Common Redstart is brownish-grey above, mottled with dull yellow, but juvenile Black Redstart resembles adult female. Common Redstart frequents woodlands, especially where there is old timber, and open hilly country, where it haunts stone walls and the buildings about upland farms. The short song, a few jerky notes succeeded by a bubbling roll, seems to break off before completion, a prelude rather than a finished strain. Call-note a plaintive "wheet." Alarm-note a loud "whee-tic-tic."

BREEDING-HABITS.—In south generally nests in hole of tree or stump, sometimes almost on ground, or at a good height; also in walls and occasionally in old sheds or outhouses. Farther north a common site is in loose stone walls. Old Woodpecker holes, Swallows' nests and discarded tins have been used as nesting-sites. *Nest.*—Built of grasses, strips of bark, moss, roots and lined with hair and feathers. *Eggs.*—Normally 6, sometimes 5 or 7, rarely 8 or 9, delicate pale blue, but occasionally speckled with dark red-brown. Average of 100 eggs, 18.3×13.8 mm. *Breeding-season.*—Occasionally early May but usually from mid-May onward. *Incubation.*—Lasts 14 days (Evans), performed chiefly by hen, if not altogether. Most birds apparently single brooded.

FOOD.—Mainly insects: coleoptera (including *Phyllobius*), smaller lepidoptera and their larvæ (especially larvæ of *Tortrices*), diptera and hymenoptera (larvæ of saw-flies, etc.). Spiders also taken and small worms have been found in stomach. Young fed chiefly on caterpillars. Naumann states that berries (red and black elder, juniper, etc.) are eaten.

DISTRIBUTION.—*England and Wales.*—Summer-resident (late March to Oct.), widely distributed, but local. Uncommon as nester west of Exeter (Devon) and unusual in Cornwall. *Scotland.*—Widely distributed but local. Rare as nester in extreme north of mainland, has not bred Orkneys and only once Shetlands (1901), but is well

known in these islands and Fair Isle as spring and autumn migrant. Breeds in Mull, but not elsewhere in I. Hebrides, but occurs regularly on double passage at Skerryvore. Scarce autumn and rare spring visitor to O. Hebrides and stated to have bred Lewis 1914. *Ireland*.—A few pairs used to breed regularly in Wicklow and occasionally in Tyrone, but doubtfully now. Very scarce on migration on south and east coasts and very rare at north and west coasts lights.

MIGRATIONS.—*Great Britain*.—Summer-residents begin to arrive end first week April (early dates, March 24-31, April 1-4); main arrival early third week April to end third week May. Passage-migration by east and west coast routes (Channel to northern isles) mid-April to mid-June. Occasional stragglers Hebrides and northern isles in March and early April. Summer-residents begin to move south second week July in Scotland, end of month in north England and by mid-Aug. farther south. Emigration from south coast begins last few days Aug. (early date July 10-11, 1910, St. Catherine's Lt., I. of Wight) and lasts to first week Oct., stragglers frequent to end of month. Well marked passage-movement east coast (northern isles to Channel), with evidence of direct oversea immigration so far south as Norfolk coast, second week Sept. to fourth week Oct., with stragglers to end of month. Similar but much smaller and less well marked movement west coast (Hebrides to Channel) same time. (Late dates Fair Isle Nov. 2, Staffs. Nov. 2, 1911, Pentland Skerries (Orkney) Nov. 7, 1915.) *Ireland*.—Small passage-movement east coast, spring.

DISTRIBUTION.—*Abroad*.—Europe from North Cape to Mediterranean, but in Spain absent from south, in Italy only in mountains, and in Greece on passage; Russia with exceptions of Steppes, Tundras and Crimea; in Siberia to Irkutsk and Lake Baikal. Wintering in west and north-east Africa, casual Madeira. Replaced by allied races in Atlas mountains (requiring confirmation), and in Crimea, Caucasus, Transcaucasia, Asia Minor, Persia, and Bochara, while a form described from Turkestan is so far doubtful.

PHŒNICURUS OCHRURUS

190. *Phœnicurus ochrurus gibraltariensis** (Gm.) — THE BLACK REDSTART.

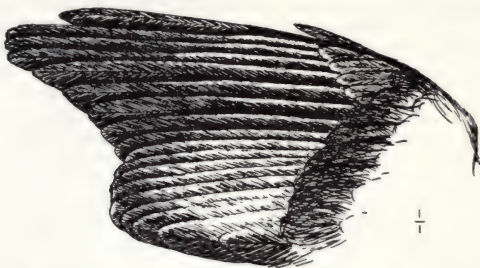
MOTACILLA GIBALTARIENSIS Gmelin, Syst. Nat., i, 2, p. 987 (1789—Gibraltar).

Ruticilla titys (Scopoli), Yarrell, i, p. 333; Saunders, p. 33.

Ph. o. gibraltariensis, Hartert, Brit. B., iv, p. 132.

* The time-honoured name *titys* is erroneously used for the Black Redstart. Linnæus described under that name an old female of the Redstart, and *not* a Black Redstart. Therefore *gibraltariensis* must be used, and as the Black Redstart of the Caucasus is a subspecies (geographical representative) of it, the name of the latter, being older, becomes the specific name of the Black Redstarts.—E.H.

DESCRIPTION.—*Adult male. Winter.*—Fore-head black, feathers narrowly tipped grey; crown, mantle, scapulars and back dark french-grey more or less washed brown, feathers of mantle and



The Black Redstart (*Phoenicurus o. gibraltariensis*). Adult male.

scapulars with more or less black (varying individually) above the french-grey tips, the black mostly concealed, but showing here and there especially in those birds which have a considerable amount of it* (feathers of fore-part of crown very rarely have whitish centres); rump and upper tail-coverts bright chestnut; lores, ear-coverts, sides of neck, chin, throat and breast black, feathers narrowly tipped grey (more broadly tipped on breast); flanks grey often washed yellowish-brown (varying individually); centre of belly greyish-white; under tail-coverts orange-buff; under wing-coverts and axillaries blackish tipped ashy-grey; tail: central pair brown-black with bases and fringes of outer webs chestnut, rest chestnut usually with some dark brown at tips (varying in extent individually); primaries and secondaries blackish-brown inner webs edged greyish-white, outer webs of primaries narrowly edged same, outer webs of secondaries and especially inner secondaries broadly edged white, forming distinct wing-patch; primary-coverts very dark grey edged paler; greater coverts blackish-brown edged and tipped grey; median and lesser coverts blacker tipped grey. This plumage is acquired by complete moult Aug.-Oct. *Summer.*—No moult.† Abrasion of tips of feathers makes black of mantle and under-parts much more uniform and intense, while in much worn plumage lesser and median wing-coverts also become almost uniform black.

* A specimen in moult from first summer to adult has new feathers of mantle french-grey with no black and those specimens with scarcely any black in mantle but otherwise adult may be second winter birds.

† Two specimens were growing a few feathers on mantle, breast and throat, in Feb. and Mar., but this appears to have been abnormal as many others show no sign of moult in spring.

Adult female. Winter.—Feathers at base of nostrils brown to whitish-brown, rest of fore-head, crown, mantle, scapulars and back greyish-brown; rump and upper tail-coverts chestnut, but duller than in male; lores, chin and feathers round eye whitish-brown freckled darker brown; ear-coverts, sides of neck, breast and flanks brown; centre of belly brownish-white; under tail-coverts pale orange-buff; under wing-coverts and axillaries brown tipped yellowish-brown; tail as male, but duller chestnut and central feathers and tips of others browner not so blackish; primaries and secondaries brown, inner webs edged whitish and outer webs narrowly edged pale brown to whitish; greater wing-coverts brown edged and tipped pale brown; median and lesser coverts same, but rather greyer-brown. Moults as in male. *Summer.*—As winter, abrasion causing very little difference in colour.

Nestling.—(Not examined.)

Juvenile.—Upper-parts as adult female, but of a less greyish tone of brown and feathers very faintly tipped darker brown; rump chestnut-buff, feathers very faintly tipped brown; upper tail-coverts more chestnut and without brown tips; lores, ear-coverts, chin, throat and upper-breast slightly paler than upper-parts and with dark tips of feathers rather more distinct, lower breast and flanks paler brown and dark tips more distinct; centre of belly buff to whitish; under tail-coverts deeper buff; axillaries and under wing-coverts as adult female; tail as adult female; wing-feathers and wing-coverts as adult female, but edgings and tips of secondaries and wing-coverts browner and not so pale and greyish.

First winter and summer. Male.—Usually like adult female and very difficult to distinguish, but upper-parts rather browner with less greyish tone and edgings of secondaries and outer greater wing-coverts browner not so pale and greyish. Some first winter males are, however, more like adult males but are more washed with brown on upper-parts and with scarcely any black on mantle, with duller chestnut on rump, upper tail-coverts and tail, with larger and more brownish tips to feathers of chin, throat and breast and are tinged brown on flanks and breast; primaries, secondaries and primary-coverts brown as in juvenile but occasionally one or two secondaries usually in one wing only are moulted (probably accidentally) and have whitish edgings; outer greater coverts brown as in juvenile, varying number of inner greater coverts (usually 3 or 4) and all median and lesser coverts blackish tipped french-grey as in adult male. The juvenile body-feathers, lesser and median wing-coverts, varying number of innermost greater coverts (usually 3 or 4 but occasionally none) are moulted Aug-Sept., but not primaries, primary-coverts, nor usually secondaries and not rest of greater wing-coverts.

First winter and summer. Female.—Like the brown first winter and summer male and only to be distinguished from

adult female as described above under first winter and summer male.

Measurements and structure.—♂ wing 81-90 mm., tail 58-64, tarsus 21-24, bill from skull 13.5-15 (12 measured). ♀ wing 80-86. Primaries : 1st 5-9 mm. longer than primary-coverts, 4th and 5th longest, 3rd occasionally equal but usually 1-2 shorter, 6th 2-5 shorter, 2nd 10-12 shorter ; 3rd to 6th primaries emarginated outer webs. Rest of structure as in Common Redstart.

Soft parts.—Bill, legs, and feet black ; iris black-brown.

CHARACTERS AND ALLIED FORMS.—*Ph. o. ochrurus* (northern Asia Minor) male has chestnut belly and axillaries and female is paler brown on under-parts than in *Ph. o. gibraltariensis* ; *Ph. o. semirufa* (mountains of Syria and Palestine) male is much as in *Ph. o. ochrurus* but chestnut extends rather farther up breast and female is scarcely distinguishable from that of *Ph. o. gibraltariensis* ; *Ph. o. phoenicuroides* (N. and E. Persia to Kashmir) male has chestnut still farther extended, mantle is not so black and fore-part of crown is whitish, female is paler brown especially on under-parts ; *Ph. o. rufiventris* (Tibet eastwards) male is much like last but has darker brown upper-parts and female is darker and rufous on flanks. Chestnut rump and tail, white wing-patch of adult male and brown under-parts of female and young male distinguish Black Redstart from other British birds.

FIELD-CHARACTERS.—A winter-visitor to this country. Any Redstart occurring between October and March is a presumptive Black Redstart, particularly if it be seen about sea-cliffs or the beach. Characters distinguishing it from Common Redstart are given under that species. Song somewhat resembles Common Redstart's, but is uttered as if with difficulty and has some hissing notes (Hartert). Call-note a soft "sit" or "fitz" (Saunders). Alarm-note "feed-teck-teck" (Hartert).

BREEDING-HABITS.—In some districts almost always inside farm sheds or on rafters under eaves ; in others in clefts of rocks, while in towns it may be found in holes of inhabited buildings. *Nest.*—Loosely built of dry grasses, moss, fibre, etc., lined with hair and feathers. *Eggs.*—5-6, glossy white, rarely with tinge of bluish or faint brown spots. Average size of 100 eggs, 19.4×14.3 mm. *Breeding-season.*—From end April onward according to altitude. *Incubation.*—Chiefly at any rate by hen, and lasts 13 days (Naumann). Double brooded.

FOOD.—Mainly insects, especially small coleoptera, but diptera, hymenoptera and lepidoptera and their larvæ, etc., also taken. Naumann adds spiders and millipedes (*Julus*) and states that berries are only eaten during hard weather. Saunders says small crustaceans are taken by birds wintering on coast.

DISTRIBUTION.—*England and Wales.*—Passage-migrant and winter-visitor. Normally first week Oct. to fourth week Nov. (early dates, Suffolk, Sept. 15 and 16, 1910; Fastnet Lt. (Cork), Sept. 19, 1909; Surrey, Sept. 25, 1912; Tarbatness Lt. (E. Ross.), Sept. 26, 1915; Auskerry (Orkney), Sept. 29-30, 1913); beginning March to second week May (late dates, Pentland Skerries (Orkney), June 11 and 12, 1914; Bull Rock (Cork), June 15, 1903). Regular but generally in very small numbers along south and east coasts England as far as Yorks., north of which, as well as on west side England north of Bristol Channel and in Wales, it is more rarely observed. In southern counties of England, and especially in Cornwall and Devon, winters regularly, but elsewhere only rarely found in winter. Reports of breeding are not substantiated. *Scotland.*—Of recent years noted as fairly regular passage-migrant in very small numbers spring and autumn at Isle of May and Fair Isle and fairly often in Orkneys and Shetlands, but rarely observed on mainland. On western side rare straggler: Solway (five times), Clyde (twice). In O. Hebrides, four times Flannans and once South Uist. Once Tiree. *Ireland.*—Fairly regular autumn and occasional spring passage-migrant in south and east. Rare elsewhere. Occasionally in winter.

DISTRIBUTION.—*Abroad.*—Europe from Baltic to Mediterranean, east to Roumania and Bulgaria. Wintering partly in Europe, but mostly in Africa. Casual in Scandinavia, once Finland and once reported Iceland. Replaced by a number of rather different forms in Caucasus, Armenia, Persia, Syria, Transcaspiia to Turkestan, Altai and Sayan Mountains, central Asia generally and parts of the Himalayas to Tibet and Mongolia.

Genus LUSCINIA Forst.

LUSCINIA Forster, Synopt. Cat. Brit. B., p. 14 (1817—Type: "*Sylvia luscinia*" (= *L. megarhyncha*) by monotypy and tautonymy).

This genus, as here conceived, is generally split into two, so far as British birds are concerned, viz., Nightingales (*Luscinia* in a restricted sense) and Bluethroats (*Cyanecula* or more correctly *Cyanosylvia*), but there appear to be no valid reasons for this, as colour alone cannot be used as a generic character. The genus, as it is, is not easily separable from *Phœnicurus*, but rectal bristles are less developed, tail shorter than in most *Phœnicurus*, plumage not quite so soft. In Bluethroats sexes are different, but in Nightingales alike in plumage. Habits differ from those of Redstarts. Young spotted. Nest on or near ground, or low in bushes, eggs greenish or bluish-brown, uniform or (generally faintly) spotted. Palæarctic region south to Atlas and Loo Choo Islands, in winter all over Africa and parts of tropical Asia, also Alaska.

Key to species of genus LUSCINIA.

- | | | | |
|-----|--|---|--------------------------------|
| 1 { | Tail uniform | 2 | |
| | Tail parti-coloured, lateral rectrices ferruginous at base, brown at tip | | <i>L. svecica</i> , p. 473 |
| 2 { | 1st primary shorter than primary-coverts | | <i>L. luscinia</i> , p. 471 |
| | 1st primary as long as or longer than primary-coverts | | <i>L. megarhyncha</i> , p. 468 |

LUSCINIA MEGARHYNCHA**191. *Luscinia megarhyncha megarhyncha* Brehm — THE NIGHTINGALE.**

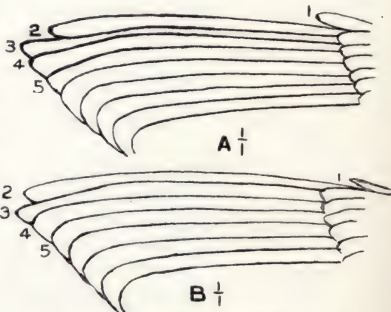
LUSCINIA MEGARHYNCHOS Brehm, Handb. Naturg. Vög. Deutschl., p. 356 (1831—Germany).

*Daulias luscinia** (Linnæus), Yarrell, I, p. 312; Saunders, p. 39.

DESCRIPTION (Plate 16).—*Adult male and female. Winter.*—

Whole upper-parts rufous-brown; upper tail-coverts brighter chestnut-brown; lores brownish-white, feathers tipped brown; orbital ring brownish-white; ear-coverts brown mesially streaked brownish-white; chin and centre of throat dull white; sides of throat, upper-breast and flanks pale greyish-brown to pale yellowish-brown; rest of breast and belly

dull white; under tail-coverts pale creamy-buff; under wing-coverts brown tipped creamy-buff; axillaries creamy-buff with brown bases; tail-feathers uniform chestnut-brown, central pair rather duller; primaries and secondaries, inner webs black-brown edged pale brown, outer webs rufous-brown, innermost secondaries rufous-brown on both webs; wing-coverts rufous-brown, the greater series having darker brown inner webs. This plumage is acquired by



A. The Nightingale (*Luscinia m. megarhyncha*). B. The Thrush-Nightingale (*L. luscinia*). Showing differences in wing-formula. Note especially lengths of 1st and 2nd primaries, and 3rd and 4th emarginated in Nightingale and only 3rd in Thrush-Nightingale.

* The specific name *luscinia* originally referred to the Thrush-Nightingale or Sprosser, and cannot, therefore, be used for our Nightingale! See, among others, Sharpe, *Handlist*, IV, p. 153.—E.H.

complete moult from July to Sept. *Summer*.—No moult. Abrasion causes no marked differences but upper-parts become rather paler.

Nestling.—Down greyish-black. Distribution, fairly long and plentiful on inner supra-orbital, occipital and spinal, shorter and more scanty on outer supra-orbital, humeral and ulnar, filaments sometimes on femoral tracts. Mouth inside orange, no spots; externally flanges almost white shading to pale yellow at angle of gape.

Juvenile. Male and female.—Whole upper-parts rufous-brown but each feather with a paler spot near the tip and a dark brown edging; upper tail-coverts uniform chestnut-brown; chin and centre of belly dull white, feathers very narrowly tipped dark brown; rest of under-parts more buffish-white and feathers broadly tipped dark brown (thus having spotted appearance); under tail-coverts buff; under wing-coverts and axillaries as adult but rather paler; tail-feathers as adult but with very small pale spots at tips; wing-feathers as adult but innermost secondaries with small pale rufous tips; all wing-coverts as mantle, feathers with a pale spot at tip and edged dark brown but in outer greater coverts spot is not so pale and dark brown edging is very narrow.

First winter. Male and female.—Like adults except for innermost secondaries and outer half of greater wing-coverts, which have pale rufous spots at their tips as in juvenile. The small pale spots at tips of tail-feathers are usually worn off. The juvenile body-feathers, lesser and median wing-coverts and inner half of greater coverts are moulted July-Sept., but not remiges, rectrices, primary-coverts nor outer half of greater coverts. *Summer*.—As adult but pale tips of some of the outer greater coverts usually still observable and even those of innermost secondaries not always worn off.

Measurements and structure.—♂ wing 82-89 mm., tail 63-67, tarsus 26-28, bill from skull 16-18 (12 measured). ♀ wing 78-84. Primaries: 1st 1-5 mm. longer than primary-coverts, occasionally equal to them and very rarely 1 mm. shorter, 3rd longest, 4th occasionally equal but usually 1-2 shorter, 2nd 5-9 shorter, 5th 4-6 shorter, 6th 7-10 shorter; 3rd and 4th emarginated outer webs. Secondaries 3-5 mm. shorter than 10th primary, tips fairly square. Tail rounded, 12 feathers, tips sloped off. Bill fine but strong, tip of upper mandible slightly curved and projecting beyond lower. Nostrils partially covered by membrane but not by feathers. Some fine and short nasal and rictal bristles.

Soft parts.—Bill dark brown, base of lower mandible pale livid flesh; legs and feet pale livid flesh to pale grey-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*L. m. golzii* (Turkestan) has longer wing and tail and is much paler, not so rufous, on upper-parts and whiter on under-parts; *L. m. africana* (Persia) is intermediate

in colour between last and *L. m. megarhyncha*, has wing same as *L. m. megarhyncha* but tail longer (73-78 mm.). For differences of *L. luscinia* see under that species. Uniform rufous-brown upper-parts and chestnut-brown of tail distinguish adults from other species. Juveniles are much like juvenile Common Redstarts but more rufous on upper-parts, central tail-feathers not so dark and other tail-feathers not so chestnut : also resemble juvenile Redbreasts but are whiter on throat and breast, have chestnut-brown tail and different wing-formula.

FIELD-CHARACTERS.—In form, and to some extent in behaviour, a large Redbreast with uniform russet-brown upper-parts, shading into pale chestnut on upper tail-coverts and tail, and ashy-grey under-parts tending to whitish on throat and abdomen. A dweller in woods with thick undergrowth, copses and tangled hedgerows ; would often be overlooked were it not for song, which is of great power and variety of phrase and unique among British birds, an impassioned outpouring impossible to set down in words, its most striking features being a phrase of rich bubbling notes and a single note " piou " repeated perhaps ten times in a wonderful crescendo. Sings from mid-April to mid-June at all hours, but principally at dusk and dawn. Call-note, a soft " weet " ; alarm-note, a hoarse " k-r-r-r."

BREEDING-HABITS.—Nests in little spinneys by roadsides, woods, thickets or sheltered by high hedgerows. *Nest.*—Generally on or close to ground, but occasionally a few feet above it. Foundation bulky, mainly oak or other dead leaves, lined with dead grasses, sometimes hair or a few leaves. *Eggs.*—4 or 5, exceptionally 6, usually olive-greenish to olive-brown, formed by superimposing thick brown speckling on blue ground. Some eggs show brown markings very distinctly ; rare variety is bright blue, unmarked ; another has brown markings on a dirty white ground. Average size of 100 eggs, 20.5×15.5 mm. *Breeding-season.*—Begins early May, but many birds do not nest till mid-May. *Incubation.*—14 days (R. Morris), by hen alone, apparently ; but Naumann says cock shares. Single brooded.

FOOD.—Obtained principally on ground ; worms and insects, especially coleoptera. Also larvæ of lepidoptera and pupæ of ants, diptera and spiders. Fruit and berries also eaten, especially those of elder.

DISTRIBUTION.—*England and Wales.*—Summer-resident (April to mid-Sept.). Generally distributed in suitable places and locally numerous south and east of a line joining Wash and Severn, except in Cornwall and extreme west Somerset, where it is absent, and in Devon, where it is confined to river-valleys a short distance inland from south coast as far west as the Dart. In Hereford, Monmouth,

and Glamorgan confined to southern river-valleys. North and west of above-mentioned line becomes rapidly scarce, and is only regular and at all numerous in river-valleys, and is sporadic and uncertain in south Staffs., Salop, and south Derby., and only occasional in Cheshire and the extreme east of Brecon, Montgomery, Denbigh, and Flint. On east side locally not uncommon in Leicester, Notts., and Lines., but thins out northwards and breeds irregularly in southern parts of the eastern and south-eastern portions of West Yorks., and sporadically in eastern half of North Yorks. Records of vagrants from Bishop Rock Lt. (Scillies), Sept. 18, 1912, Carmarthen, Cardigan, Lanes. (?), Durham, and Northumberland (*cf. Brit. B.*, v., pp. 2-21). *Scotland*.—One, Isle of May (Forth), May 9, 1911 (*Ann. Scot. Nat. Hist.*, 1911, p. 132).

MIGRATIONS.—*England*.—Early arrivals of summer-residents second week April (early dates 5, 7, 8); main arrival end third week to end third week May. Very little information as to autumn movements. Begins to move from breeding-haunts beginning Aug. if not before, earliest emigratory record Aug. 17 Dungeness Lt. (Kent) latest Sept. 30—Oct. 1 Hanois Lt. (Channel Islands).

DISTRIBUTION.—*Abroad*.—Europe from shores of North Sea to Mediterranean, and Black Sea, north-west Africa, Asia Minor, and Cyprus, wintering in Africa. Casual in Madeira. Replaced by other races in Persia, Turkestan, and Khirgiz Steppes. A Corsican form has been separated, but appears to be untenable (*Orn. Monatsber.*, 1910, p. 155).

LUSCINIA LUSCINIA

192. *Luscinia luscinia* (L.)—THE THRUSH-NIGHTINGALE.

MOTACILLA LUSCINIA Linnæus, *Syst. Nat.*, ed. x, i, p. 184 (1758—"Europa." Restricted typical locality: Sweden. Linnæus expressly says that he did not observe the small Nightingale).

Luscinia luscinia, W. E. Clarke, *Scot. Nat.*, 1912, p. 9; *cf. Brit. B.*, v, p. 240.

DESCRIPTION.—*Adult male and female. Winter*.—Whole upper-parts dark earth-brown, tinged olivaceous, much darker than in Nightingale and not rufous; upper tail-coverts less olivaceous and with a tinge of rufous; under-parts like Nightingale but feathers of breast with small brown centres giving breast a more or less mottled appearance; under-tail-coverts pale buff with some of the feathers sometimes with a few brown bars or marks; tail-feathers dark rufous-brown; wing-feathers and wing-coverts as Nightingale but darker and less rufous. This plumage is acquired by complete moult in July-Aug. *Summer*.—No moult and very little change by abrasion.

Nestling.—(Not examined.)

Juvenile.—Like that of Nightingale but upper-parts less rufous ; tail and wings darker and less rufous and spots at tips of innermost secondaries and wing-coverts paler.

First winter. Male and female.—Like adults, except for pale spots at tips of innermost secondaries and outer half of greater coverts. The juvenile body-feathers, lesser, median and inner half of greater wing-coverts are moulted July–Aug., but not remiges, rectrices, primary-coverts nor outer half of greater wing-coverts. *Summer*.—Pale tips of innermost secondaries and outer greater coverts are usually not all worn off.

Measurements and structure.—♂ wing 84–92 mm. (one 95), tail 63–71, tarsus 25–28, bill from skull 16–17 (12 measured). ♀ wing 83–90. Primaries : 1st minute and about half primary-coverts, 3rd longest, 2nd and 4th 2–5 mm. shorter, 5th 7–10 shorter, 6th 9–14 shorter ; 3rd emarginated outer web. Secondaries nearly as long as 10th primary, tips fairly square. Rest of structure as Nightingale.

Soft parts.—Bill dark brown, base of lower mandible pale brown ; legs and feet pale brown ; iris dark brown.

CHARACTERS.—No subspecies. Dark colour and different wing-structure distinguish it from other Nightingales.

FIELD-CHARACTERS.—Appearance same as Common Nightingale's, but at close quarters spotted breast and more olivaceous colour can be recognized. Song more powerful than Nightingale's, and the flute-like "piou" represented by marvellously pure, bell-like notes. Although the song is often intermingled with a rasping "dserr," it is altogether more solemn and more beautiful than Nightingale's, and cannot be mistaken for that of latter. (E.H.)

BREEDING-HABITS.—Haunts marshy woodlands, nesting on stump or among low bushes near ground, and well hidden. *Nest*.—Built with characteristic foundation of dead leaves, of bents, stalks, etc., and lined with finer grasses. *Eggs*.—Usually 4–5, similar in type and range of colour to Nightingale. Average of 72 eggs, 21.7×16.2 mm. *Breeding-season*.—Varies according to latitude from early May to June. *Incubation*.—No reliable field observations, but in confinement period 13 days, by hen only (Teschemaker). Apparently single brooded.

FOOD.—Chiefly worms and larvæ of insects, especially coleoptera, and lepidoptera and pupæ of hymenoptera (ants). Berries of elder, etc., also eaten (Naumann).

DISTRIBUTION.—*Scotland*.—One Fair Isle (Shetlands), May 15, 1911 (*ut supra*). [One at Smeeth (Kent) Oct. 22, 1904 (M. J. Nicoll, *Bull. B.O.C.*, xv, p. 20) was considered an unlikely genuine migrant owing to the late date (*cf.* Hartert, *t.c.*, p. 47 ; Saunders, *Brit. B.*, i, p. 8). Another said to have been taken Norfolk, June 5, 1845,

was not identified until many years afterwards (L. A. C. Edwards, *Brit. B.*, v, p. 224).]

DISTRIBUTION.—*Abroad.*—South and middle Sweden, south Finland, Denmark, a narrow belt along the Baltic in north Germany, north-east Germany generally, Galizia, Transylvania, Roumania, Russia, east to the Ural (Orenburg) and south-west Siberia to the Altai. Casual and rare in west Europe. Wintering in east Africa.

[NOTE.—Two examples of the SIBERIAN RUBY-THROAT, *Luscinia calliope* (Pallas), are said by Mr. J. P. Nunn to have been observed by him near Westgate-on-Sea (Kent) in Oct., 1900 (*cf.* Saunders, *Brit. B.*, i, p. 8), but on this evidence the bird cannot be admitted. It breeds from Siberia to Kamtschatka, Mongolia and north China, wintering in the Philippines, south China and India, and has been observed in the Urals, Caucasus, south France (2), and Italy (4).]

LUSCINIA SVECICA

193. *Luscinia svecica gaetkei* (Kleinschm.)—THE NORWEGIAN BLUETHROAT.

ERITHACUS GAETKEI Kleinschmidt, Journ. f. Orn., 1904, p. 302 (Norwegian Alps, but type a migrant from Heligoland).

Ruticilla svecica (Linnæus), Yarrell, i, p. 321; *Cyanecula svecica* (Linnæus), Saunders, p. 35.

DESCRIPTION.—Moults like *L. s. svecica* and all plumages same, except that blue on throat of adult male in summer is deeper in colour. Averages longer in wing and longest primaries longer in proportion to secondaries than in *L. s. svecica* (see "Measurements").

Measurements and structure.—

♂ wing 74-79 mm., tail 53-59, tarsus 26-28, bill from skull 15-16 (12 measured). Primaries: 1st 1-4 mm. longer than primary-coverts, 3rd and 4th longest, 5th 1 shorter, 2nd 5-7 shorter, 6th 3-6 shorter, 7th 7-10 shorter. Secondaries from tip of longest to tip of longest primary, ♂ 15-19 mm., ♀ 14-17.



The Norwegian Bluethroat (*Luscinia s. gaetkei*). Female winter.

FIELD-CHARACTERS.—Frequents thickets of birch and willow, especially in swampy places, at high altitudes in southern parts of range, but from sea-level upwards in north. Of Robin-like habits, but for most part shy and skulking, except when feeding young. Male sings from elevated perch, tail in constant motion, frequently spread and shut. Song loud, sweet, tuneful, of great variety, and with considerable powers of mimicry. Alarm-note a harsh "tack."

As autumn passage-migrant frequents scrub, bushes, rough grass, potato and turnip crops in neighbourhood of coast, very skulking and usually only visible as it makes short dashes from one bush to another, flying close to ground. Blue throat of male conspicuous, but best character at all ages is dark brown tail with chestnut basal half, visible when bird spreads it when perched, and always very conspicuous in flight. (N.F.T.)

BREEDING-HABITS.—Haunts morasses, swampy birch forest, etc. *Nest.*—On ground, well concealed, sometimes on the side of bank, or hidden under cover of trailing juniper bushes. *Eggs.*—5 to 7 in number. The eggs of all races of Bluethroat are very similar; greyish-green with varying amount of fine speckling of red-brown. *Breeding-season.*—Latter part of June and in July. No exact details as to incubation.

FOOD.—Gurney records *Acocephalus nervosus*, *Philænus spumarius* and shell of *Littorina rudis* in a Norfolk specimen. Collett records insects (coleoptera and diptera and their larvæ); also seeds and *Clausilia*: Ticehurst mosquitoes. Worms are also said to be eaten.

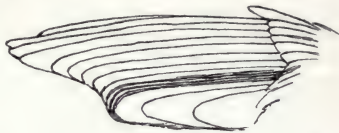
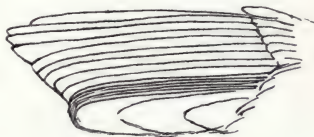
DISTRIBUTION.—*England.*—Regular autumn passage-migrant (end Aug.-second week Oct. most records latter half Sept. late date Oct. 31, Norfolk, 1900) and probably a regular, but seldom observed, spring-migrant (end April-mid-June, once March 22-23, Shipwash Lt.-v. (Suffolk) 1909, most records in May) along east coast. Rare straggler south coast; elsewhere not recorded. *Scotland.*—On mainland only once autumn (Elgin, Sept. 15, 1890), and three times spring (Bellhaven (E. Lothian) May or June 1868, off Aberdeen, May 16, 1872, Carmyle, Clyde, May 14, 1910). In Fair Isle regularly in autumn and spring, and in Isle of May fairly so in autumn. Three Unst (Shetlands) Sept. 1902, one Monach Island Light (O. Hebrides) Oct. 1888, four times Pentland Skerries (Orkneys) May 12, 1890, May 6 and Sept. 19, 1913, June 10, 1914, Aukerry, May 8 and Sept. 5, 1913. N.B.—It is assumed that this is the form which occurs regularly as amongst numerous specimens examined only one *L. s. svecica* has been detected.

DISTRIBUTION.—*Abroad.*—Norwegian high mountains. Passes in numbers over Heligoland, through Holland, and apparently north-west Germany, France, and Spain. Replaced by allied forms in Lapland and Sweden, and north Asia.

194. *Luscinia svecica svecica* (L.) — THE LAPLAND BLUETHROAT.

MOTACILLA SVECICA Linnæus, Syst. Nat., ed. x, i, p. 187 (1758—"In Europæ Alpinis." Restricted typical locality: Sweden and Lapland). *Luscinia svecica svecica*, L. J. Rintoul and E. V. Baxter, Scot. Nat., i, p. 236 (1912).

DESCRIPTION.—*Adult male. Winter.*—Crown dark brown streaked with black, forming a dark line on each side of crown ; rest of upper-parts dark brown, slightly tinged buff especially on rump, feathers being very narrowly fringed buff ; upper tail-coverts same, but with bases of feathers bright chestnut ; line from nostrils over eye warm buff becoming greyer behind eye ; lores and ear-coverts dark brown mottled and streaked buff ; sides of neck greyish-brown ; moustachial stripe metallic-blue, some of the feathers lightly tipped pale buff ; on each side of chin and throat a brown-black line ; chin and centre of upper throat black (tinged here and there blue and sometimes with some metallic-blue feathers) these colours mostly concealed in fresh plumage by pale buff fringes ; in centre of lower throat orange-chestnut patch, base of feathers white or whitish ; below this throat-spot broad band of metallic-blue, with bases of feathers of upper portion white and of lower black and feathers lightly tipped white ; below blue band a narrow black band, feathers tipped white ; below this a chestnut band, feathers more or less tipped white ; rest of breast and belly buffish-white ; flanks greyish-brown washed buff ; under tail-coverts buff ; axillaries and under wing-coverts brown with long buff fringes ; tail : central pair black-brown narrowly edged and tipped buff, rest same but with basal half of each feather bright chestnut ; primaries and secondaries dark brown, inner webs narrowly edged whitish and outer webs pale brown ; all wing-coverts as mantle, feathers narrowly fringed and tipped buffish-brown. This plumage is acquired by complete moult Aug.-Sept. *Summer.*—A moult confined to whole chin and throat including moustachial stripes and down to and including blue breast-band, ear-coverts and orbital feathers takes place Feb.-March and early April. The rest of the feathers are not moulted though occasionally a feather here and there on the body may be renewed. New feathers of whole chin and upper throat including their sides metallic-blue (tipped greyish when freshly grown), spot in centre of lower throat chestnut, feathers on each side joining upper throat and breast-band metallic-blue. Abrasion causes chestnut breast-

A $\frac{1}{2}$ B $\frac{1}{2}$

A. The Norwegian Bluethroat (*Luscinia s. gaetkei*).
B. The Lapland Bluethroat (*L. s. svecica*). Showing longer "wing-tip" (from tips of secondaries to tips of primaries) in former than in latter.

band to become restricted, rest of under-parts whiter, crown less marked with black and eye-stripe whiter.

Nestling.—(Not examined.)

Adult female. Winter.—Upper-parts, wings and tail as male; moustachial stripes, chin and centre of throat buff to buffish-white, feathers here and there with dark brown spots, occasionally a few blue feathers in moustachial stripe and throat-spot sometimes rufous; lines down sides of throat and breast-band brown-black, feathers edged greyish-white, feathers of upper part of breast-band sometimes pale metallic-blue; rest of breast below breast-band dull white mottled black-brown and tinged rufous-buff; rest of under-parts rather paler than and not so buffish as in male. Moults as in male. *Summer*.—Moults as in male. Plumage usually as in winter, but some examples acquire considerable amount of blue in moustachial region and a little on chin.

Juvenile. Male and female.—Whole upper-parts brown-black, each feather with a median line of buff broadening at the tip, especially in feathers of mantle and scapulars; upper tail-coverts rufous, slightly fringed dark brown; lores and ear-coverts buff, feathers tipped black-brown; chin pale buff, feathers lightly tipped dark brown; throat and breast buff, feathers widely fringed black-brown; flanks same but with less black-brown; centre of belly buffish-white speckled with black-brown; under tail-coverts, axillaries, under wing-coverts, tail-feathers, primaries and secondaries as adult but innermost secondaries with more buffish edgings and with small buff spots at their tips; primary-coverts with buff tips; greater coverts with buff edgings and tips; median and lesser coverts with broad buff tips. N.B.—Buff tips of wing-coverts are broader in centre of feather and thus somewhat wedge-shaped.

First winter. Male.—Like adult male but blue of moustachial stripe less pronounced, chin whitish, centre of throat varying from whitish with a few rufous feathers at base to pale chestnut but chestnut never so dark nor so extended as in adult male; chestnut breast-band usually paler than in adult; primary-coverts and outer half of greater coverts with buff tips as in juvenile and buff tips sometimes observable on innermost secondaries but these soon become worn off. The juvenile body-feathers, lesser and median, and varying number of inner greater wing-coverts are moulted Aug.-Sept., but not remiges, rectrices, primary-coverts nor rest of greater coverts. *Summer*.—Moults as in adult after which becomes like adult summer male but distinguishable by buff tips to outer greater wing-coverts.

First winter. Female.—Like adult winter female but chin and centre of throat whiter, without spots and very rarely with a tinge of rufous; very rarely indeed with even a tinge of blue on breast-band; wings as in first winter male. *Summer*.—Varies

as adult female summer and can only be distinguished by buff tips to greater wing-coverts as in first summer male.

Measurements and structure.—♂ wing 69-74 mm., tail 53-59, tarsus 24-28, bill from skull 14-16 (12 measured). ♀ wing 65-74. Primaries : 1st 2-8 mm. longer than primary-coverts, 3rd and 4th longest, 5th occasionally equal but usually .5-2 mm. shorter, 2nd 4-8 shorter, 6th 2-4 shorter, 7th 5-7 shorter ; 3rd to 5th primaries emarginated outer webs. Secondaries : from tip of longest to tip of longest primary, ♂ 10-16 mm., ♀ 9-14 ; tips somewhat square. Tail slightly rounded, 12 feathers, tips sloped off. Rest of structure as Nightingale.

Soft parts.—Bill dark brown, base of lower mandible rather paler ; legs and feet yellowish-brown ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *L. s. gaetkei* and *L. s. cyanecula* see under those forms ; *L. s. pallidogularis* (Turkestan) is like *L. s. svecica* but has paler upper-parts and paler blue throat ; while *L. s. discessa* (Alai) is smaller and still paler ; *L. s. robusta* (east Siberia) appears to be larger and darker than *L. s. svecica* ; *L. s. occidentalis* (south Russia) is like *L. s. cyanecula* but with more or less rufous on throat-spot ; *L. s. magna* (south-west Persia) appears to be larger and to have either no spot or a small white one ; *L. s. abbotti* (Kashmir, east Turkestan) is stated to be smaller and to have a very small white, or red and white throat-spot.

BREEDING-HABITS.—Not known to differ in any way from those of Norwegian form. *Eggs.*—Similar to those of other races. Average of 100 eggs, 18.5×14 mm. *Breeding-season.*—From mid-June onward.

FOOD.—Lynes records diptera (small black flies), also aquatic insects and larvæ in stomach. Apparently chiefly insects and their larvæ and worms.

DISTRIBUTION.—*Great Britain.*—One, Isle of May, September 14, 1909 (*ut supra*).

DISTRIBUTION.—*Abroad.*—Breeds in Sweden, Lapland, north Russia and the tundra of west Siberia, east to the Yenisei (66° N. lat.) ; wintering in north-east Africa and occasionally also western India, and visiting eastern Europe and Transcaspiæ on passage.

195. *Luscinia svecica cyanecula* (Wolf)—THE WHITE-SPOTTED BLUETHROAT.

SYLVIA CYANECULA Wolf, in Meyer & Wolf's Taschenb. d. deutsch. Vögelk., I, p. 240 (1810—Germany).

Cyanecula leucocyana Brehm, Yarrell, I, p. 323 (in text) ; *Cyanecula wolff* C. L. Brehm, Saunders, Brit. B., I, p. 7.

DESCRIPTION.—*Adult male.* *Winter.*—Like *L. s. svecica* but upper-parts slightly darker in a series though individuals frequently cannot be distinguished; under-parts like *L. s. svecica* but throat-spot instead of being chestnut is silky-white though some of the feathers frequently have rufous-buff or chestnut tips. Moults as in *L. s. svecica*. *Summer.*—Throat-spot silky-white varying in size, a few of the feathers very rarely tipped chestnut, occasionally throat is entirely blue without any spot but in such cases bases of feathers in region of throat-spot are usually (but not invariably) silky-white.

Female. *Winter and summer.*—Like that of *L. s. svecica*.

Juvenile.—Like that of *L. s. svecica*.

First winter. Male.—Feathers of throat-spot as in adult male but usually with more rufous-buff or chestnut on tips. Some individuals, however, appear to be indistinguishable from some first winter examples of *L. s. svecica*.

Measurements and structure.—♂ wing 73–80 mm., tail 53–57, tarsus 26–28, bill from skull 15–16 (12 measured). Primaries: 1st 3–5 mm. longer than primary-coverts, 3rd and 4th longest, 5th occasionally equal but usually .5–2 shorter, 2nd 5–8 shorter, 6th 2–5 shorter, 7th 5–9 shorter. Secondaries from tip of longest to tip of longest primary, ♂ 10–18 mm.

BREEDING-HABITS.—Haunts low-lying, marshy ground, willow-beds, thickets, etc. *Nest.*—Cleverly concealed under cover of thick undergrowth in hollow in bank, not unlike site of Robin's nest. Built of stalks and grasses mixed with moss and lined horsehair, finer grasses and bits of down. *Eggs.*—5 or 6, light greyish-green with fine reddish-brown speckles at large end sometimes forming a distinct cap. Average of 100 eggs, 18.9×14.2 mm. *Breeding-season.*—Latter half of May; most eggs about last week of month. *Incubation.*—About a fortnight; chiefly by hen, relieved by male for some hours (Naumann). Probably two broods.

FOOD.—Insects, mainly picked up on ground (small coleoptera, aquatic insects and larvæ, diptera and larvæ, caterpillars, etc.) and worms. According to Naumann berries of red and black elder, etc.

DISTRIBUTION.—*Great Britain.*—Nine males.* Near Scarborough (Yorks.), April 12, 1876 (J. G. Tuck, *Zool.*, 1876, p. 4976, cf. *Birds Yorks.*, p. 38 and *Brit. B.*, i, p. 228). Dungeness Light (Kent) Oct. 6, 1902 (M. J. Nicoll, *Bull. B.O.C.*, XIII, p. 14). Near Hastings

* A bird said to have been a Bluethroat was seen by Captain Hadfield at Bonchurch, Isle of Wight, from about Feb. 1865 to Sept. 1867 and is said to have had a spotless blue throat in the month of November 1865! In Jan. 1866 another Bluethroat was recorded from the same place by the same observer. No Bluethroats have been observed elsewhere in Great Britain in winter.

(Sussex) Sept. 1, 1905 (C. B. Ticehurst, *op. c.*, xvi, p. 34). Fair Isle (Shetlands) March 22, 1909, May 14, 1910 and May 9, 1913 (W. E. Clarke, *Ann. Scot. Nat. Hist.*, 1910, pp. 67, 196; *Studies in Migration*, II., p. 142, *Scot. Nat.*, 1914, p. 54). Two, Pett Level (Sussex), May 15 and 17, 1911 (H. W. Ford-Lindsay, *Brit. B.*, v, p. 23, J. B. Nichols, p. 106). St. Leonards (Sussex), Sept. 22, 1912 (N. F. Ticehurst, *op. c.*, vi., p. 187).

DISTRIBUTION.—*Abroad.*—Middle Europe from France to west Russia. Migrates through more western parts of Europe to north-west Africa, also in lesser numbers to north-east Africa. Replaced by closely-allied forms in south Russia generally, Persia, Transcaspia and Turkestan, Kashmir (Ladakh), the Karakoram, Pamir and Alai Mountains, and in eastern Siberia.

Genus ERITHACUS Cuvier.

ERITHACUS Cuvier, *Leçons d'Anat. Comp.*, i, tab. II (1800—Monotype: "*Le rouge-gorge*" = *Motacilla Rubecula* L. apud Cuvier, *Tabl. élém. hist. nat. Anim.*, p. 218, 1798).

Very near to *Luscinia*, but plumage softer, more copious, tail square, even slightly emarginate, as central pair of tail-feathers is very slightly shorter than rest. Sexes alike, young spotted. Eggs cream-colour or pinkish-white, spotted. One species in a number of subspecies in Palæarctic region from Atlantic Isles to Caucasus and Persia, south to Atlas Mountains.

ERITHACUS RUBECULA

196. *Erithacus rubecula rubecula* (L.)—THE CONTINENTAL ROBIN.

MOTACILLA RUBECULA Linnæus, *Syst. Nat.*, ed. x, i, p. 188 (1758—"Europa." Restricted typical locality: Sweden).

Erithacus rubecula (Linnæus), Yarrell, i, p. 305 (part); Saunders, p. 37 (part).

DESCRIPTION.—Like *E. r. melophilus* but upper-parts paler brown and with more olive tinge becoming when worn in summer greyish-brown; throat and breast also paler being considerably more yellowish-orange and not so rich and reddish, in worn summer plumage difference becomes still more marked than in fresh plumage; flanks paler and belly with more white.

Measurements and structure.—♂ wing 70–76 mm., tail 54–62, tarsus 24.5–26, bill from skull 13–16 (12 measured). ♀ wing 68–73. Structure as in *E. r. melophilus*, but bill is finer.

CHARACTERS AND ALLIED FORMS.—*E. r. sardus* (Corsica and Sardinia) upper-parts darker and more olive-brown than in either *E. r.*

rubecula or *E. r. melophilus* ; *E. r. witherbyi* (Northern Atlas, Algeria) breast reddish-orange as in *E. r. melophilus* upper-parts olive-brown as in *E. r. rubecula* ; *E. r. atlas* (Middle Atlas, Morocco) is darker and more earth-coloured on upper-parts than last ; *E. r. superbus* (Tenerife and Gran Canaria) upper-parts rather darker olive-brown than in *E. r. rubecula*, breast rich reddish-chestnut ; *E. r. hyrcanus* (north Persia) upper-parts more rusty-brown than in *E. r. melophilus* and long upper tail-coverts and outer webs of tail-feathers rust-coloured, breast nearly as deep red as *E. r. superbus* ; *E. r. caucasicus* (Caucasus) breast and upper-parts much as in *E. r. rubecula* but long upper tail-coverts and outer webs of tail-feathers rust-coloured. Robins are distinguished from all other British species by uniform brown upper-parts and tail and red throat and breast. Juveniles are much like juvenile Nightingale but are more buff on throat and breast, have not chestnut-brown tail-feathers and have a different wing-formula.

FIELD-CHARACTERS.—Dorsal surface lighter in tint and orange-red of throat and breast rather less deep than in British Robin, but these slight differences are barely perceptible in the field.

BREEDING-HABITS.—Not as a rule so confiding as British race and in some districts breeds in deep forest among undergrowth and far from houses or roads. *Nest.*—Similar to that of British form. *Eggs.*—5-7, similar to those of British form. Average size of 150 eggs, 19.3×14.8 mm. *Breeding-season.*—Varies according to latitude ; in mountains of south Europe about April, but not till late in May or June in north.

FOOD.—According to Naumann most orders of insects are taken, as with the British form ; also earthworms and small slugs. List of fruits and berries taken is however much longer (*Daphne*, *Prunus*, *Rhamnus*, *Euonymus*, *Cornus*, etc.), but records of seeds are few.

DISTRIBUTION.—*Great Britain.*—Passage-migrant and winter-resident. Examples have now been identified from Shetlands, Orkneys, Isle of May, Fife and Isle of Wight, spring and autumn ; from east Ross., east Lothian, Tweed, Mull of Galloway, Northumberland, Yorks., Lincs., Norfolk, Suffolk, and east Sussex coasts and Channel Islands in autumn and from Northumbrian coast in Dec. and Hants. in Jan. Small numbers winter in Fair Isle, other northern isles and St. Kilda, and it is probable that it is this race that occasionally visits other western isles and Isle of May at this season. Doubtless also many winter on mainland, especially in north and in Ireland.

MIGRATIONS.—*British Isles.*—Passage-migrants begin to arrive northern isles third week Sept. and continue to do so at intervals to mid or end Nov. and pass down east and west coasts. On west

side passage can be traced through western isles to Solway. Irish records end-Sept. to end Nov. particularly those from north-east, north and west coasts and absence of records west coast England and Wales at this period suggest probability of continuation of passage of western division, but no Irish specimens have been determined. On east side passage is traceable down whole coast to Channel and there is evidence of direct oversea immigration as well. Emigration from south coast (Sussex and Hants.) Oct. 4 to Dec. 11. Passage through Channel Islands mid-Sept. to beginning Nov. Very few spring birds have been determined, but arrivals Hants. coast recorded March 25 to April 23. Northward passage movement recorded Isle of May end April to end May and in northern isles second week March to third week May. Probably participates in passage-movements as described under British race, but no proof at present, while records in May from east and north coasts Ireland and western isles Scotland are also probably referable to this form.

DISTRIBUTION.—*Abroad*.—Europe generally up to 68° north from France to Urals, west Siberia and west Turkestan, wintering in Persia, and Mediterranean countries to oases of Sahara. Casual, Jan Mayen. Replaced by allied forms in Sardinia and Corsica, in north-west Africa, on the Canary Islands, Madeira and Azores, north Persia and Caucasus.

197. *Erithacus rubecula melophilus* Hart.—THE BRITISH ROBIN.

ERITHACUS RUBECULA MELOPHILUS Hartert, Nov. Zool., VIII, p. 317 (1901—British Isles).

Erithacus rubecula (Linnaeus), Yarrell, I, p. 305 (part); Saunders, p. 37 (part); *E. r. melophilus*, Hartert, Brit. B., I, p. 219.

DESCRIPTION (Plate 16).—*Adult male and female*. *Winter*.—Fore-head extending over eyes reddish-orange; fore-part of crown dark olive-brown, feathers more or less washed bluish-grey; rest of upper-parts uniform dark olive-brown, feathers with grey bases, but those of rump with middle portions silvery-white which shows if feathers are disturbed; upper tail-coverts rufous-brown; lores, round eyes joining fore-head and most of ear-coverts, sides of neck, chin, throat and breast rich reddish-orange, extending from over eye to side of breast a fringe of bluish-grey; centre of belly white; flanks pale olive-brown; under tail-coverts pale buff; axillaries pale buff to whitish; under wing-coverts deeper buff; tail-feathers dark brown with a tinge of rufous especially on outer webs; primaries and secondaries outer webs brown, inner webs black-brown narrowly edged pale buff, innermost secondaries more olive-brown usually (but not always) with a small buff mark or edging at tip; primary-coverts black-brown edged olive-brown; greater coverts same but all feathers except inner ones, with buff

to rufous-buff tips, varying considerably in size being in some individuals very conspicuous and in others scarcely noticeable; median and lesser coverts olive-brown. This plumage is acquired by complete moult in July-Sept. *Summer*.—No moult. Abrasion makes upper-parts somewhat paler and red of breast less rich.

Nestling.—Down sooty-black, long and fairly plentiful. Distribution, inner and outer supra-orbital, occipital, spinal and humeral (occasionally filaments on ulnar). Mouth inside yellow, no spots; externally flanges whitish-yellow.

Juvenile.—Feathers of upper-parts, lores and ear-coverts buff with edgings and tips, varying in width, dark brown, giving a spotted appearance; rump and upper tail-coverts more rufous-buff, feathers with narrower dark brown tips; narrow ring round eye buff; chin, throat and sides of belly buff, feathers narrowly edged brown; breast and flanks deeper buff and brown edgings wider; centre of belly buffish-white faintly speckled with brown; under tail-coverts, axillaries and under wing-coverts buff; tail, primaries, secondaries and primary-coverts as adult; greater coverts as adult but the inner feathers also with buff tips and buff tips to all usually paler than in adult; median and lesser wing-coverts as rest of upper-parts.

First winter and summer.—As adults. Buff tips of innermost secondaries and greater wing-coverts vary so much in individuals that they do not form any certain guide to age. The juvenile body-feathers, lesser and median wing-coverts and inner greater coverts are moulted June-Sept., but not wing- and tail-feathers, primary-coverts nor rest of greater coverts.

Measurements and structure.—♂ wing 71-76 mm., tail 55-61, tarsus 24.5-27, bill from skull 13.5-15 (12 measured). ♀ wing 69-74. Primaries: 1st 9-12 mm. longer than primary-coverts, 4th and 5th longest, 2nd 8-13 shorter, 3rd 1-3 shorter, 6th .5-2 shorter, 7th 5-8 shorter; 3rd to 6th emarginated outer webs. Secondaries about equal 10th primary, tips slightly rounded. Tail fairly square, 12 feathers, tips somewhat pointed and sharply sloped off, giving tip of tail when spread slightly forked appearance. Bill fairly strong, tip of upper mandible slightly curved and projecting beyond lower. Nostrils partially covered by membrane. Some fine and short nasal bristles and a few fairly long rictal bristles. Usually a few long filoplumes on nape projecting beyond rest of contour feathers.

Soft parts.—Bill dark olive-brown, paler at base of lower mandible; legs and feet brown; iris very dark brown.

FIELD-CHARACTERS.—Adults identified by uniform olive-brown upper-parts, and bright orange-red fore-head, throat and breast, but juveniles have no red in their coloration which is ochreous-brown spotted and streaked with buff. Trustful—almost domesticated—nature, dapper appearance and characteristic poses and

actions are too well known to require description. Song, a sweet and somewhat plaintive warble, imitative to some extent. Call-note, a short squeak. Another note, which functions as a call, and, in a lesser degree, expresses defiance and alarm, is a crackling "tik-tik-tik," heard oftenest at roosting-time. Alarm-note at nest, a long-drawn and high-pitched "pheeze."

BREEDING-HABITS.—Widely distributed, but generally breeds near houses or lanes, often in villages or towns where there are gardens or parks. *Nest.*—Frequently on ground, occasionally in stump or hole in tree or nesting-box, or among ivy on wall. At times also in sheds or outbuildings, and even in old tins or kettles. Bulky with foundation of dead leaves and moss and neatly lined with hair, sometimes a feather or two. *Eggs.*—Usually 5 or 6, but 7 to 10 and even 12 on record, larger number probably due to two hens. Ground-colour white, with fine freckles of sandy-red, which sometimes almost obscure the ground and give appearance of uniform pale reddish-ochreous. Sometimes markings take form of bold red-brown spots, or form cap at large end. Average of 100 eggs, 19.8 × 15.5 mm. *Breeding-season.*—From end of March or early April onward; occasionally also in mid-winter. Two or three broods. *Incubation.*—13-14 days (W. Evans).

FOOD.—Mainly insects, coleoptera of many species, lepidoptera (*Plusia gamma* and larvæ of many species), diptera (eggs, larvæ and imagines), orthoptera (*Forficula*), hymenoptera (ants) and gall insects (*Neuroterus*, etc.). Seeds (including grain and many species of weed) and earthworms are largely eaten; also remains of fruit (raspberries and currants) found in pellets ejected (Oldham). In Scotland seen to take berries of rowan; also whortleberries.

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed, but scarce in extreme north of Scottish mainland and in Orkneys, and apparently absent from Shetlands; sparingly distributed North Uist and Lewis, and has bred Barra since 1892, but not in other O. Hebrides. (Single birds, of which race not recorded, have occurred occasionally Flannan Isles, spring, autumn and winter.)

MIGRATIONS.—*British Isles.*—Though resident as a species considerable movements of individuals and probably of all in some areas occur, especially in Scotland and its isles and in northern parts of England. Southward movements down east and west coasts are well marked; on west side, Inner Hebrides through Isle of Man to Scillies and east coast Ireland, from beginning Aug. to mid-Sept., and Inner Hebrides to Solway and north and east coasts Ireland mid-Sept. to mid-Nov. (except for four records from Isle of Man there is only one in ten years of migrating Robins on west coast England and Wales after mid-Sept., Bardsey, Carnarvon, Oct. 29); on east side (E. Ross. to Channel) from beginning of Aug. to mid-Nov. N.B.—Records mid-Sept. to mid-Nov. probably refer in part

to *E. r. rubecula*. Many winter in parts of England particularly in south and west and in Ireland, where birds begin to appear in western isles end Sept. Others pass overseas from south coast England and Ireland at intervals from mid-Sept. to third week Nov. (early dates Aug. 10-11, St. Catherine's Lt. (I. of Wight) 1910, 15, Tuskar Rock Lt. (co. Wexford) 1912) sometimes in company with the Continental form. Also passes through Channel Isles end Aug. to end Nov. Birds ringed as nestlings in England have been reported from south Holland and south-west France. Robins (possibly both races) occur on passage at Channel Isles from third week Feb. to end March and arrive on south coast England and south-east coast Ireland end Feb. to end March. Northward passage not so well recorded as autumn southward. On west side (Bristol Channel to Inner Hebrides, and east and north coasts Ireland) mid-Feb. to mid-April and on east side (Channel to E. Ross.) mid-March to third week May. N.B.—Some birds from Isle of May in May belong to British race.

DISTRIBUTION.—*Abroad*.—Breeding-bird of Portugal appears to be indistinguishable from *E. r. melophilus*. Has occurred on migration in south Holland and south-west France, and is stated to have occurred in Italy.

FAMILY PRUNELLIDÆ ("ACCENTORIDÆ").

Bill peculiar: hard, wide at base, laterally swollen appearance, culmen rounded, distal part to nostrils slightly depressed, cutting edges hard and contracted. Nostrils free, covered with a membrane. Feet moderately strong, tarsus short, not much longer than middle toe with claw, covered in front with scales, some of which are generally more or less fused, claw of hind-toe much the longest. Wings rounded, 1st primary very short, a little longer than or even shorter than primary-coverts, 3rd longest, 4th and 5th a little shorter than or as long as 3rd. Tail shorter than wing, even or slightly emarginate. Plumage thick and fairly hard. Coloration Sparrow-like, stomach muscular as in seed-eaters. Moves on ground in short jumps, generally slightly moving wings at each jump. Quiet in habits; reminding one of *Fringillidæ*. Eggs blue. Systematic position uncertain, close relationship to Warblers or Thrushes often accepted but very doubtful. Eleven species and a number of subspecies, Europe and Asia. One genus.

Genus PRUNELLA Vieill.

PRUNELLA Vieillot, *Analyse d'une nouv. Orn.*, p. 43 (1816—Monotype: "Fauvette de haie" = Fauvette d'hiver of Buffon, i.e., *Motacilla modularis* L.—*Accentor* of former authors, but *Accentor* Bechst. 1797 is a synonym of *Cinclus*).

Characters of genus as indicated for family.

Key to species of genus PRUNELLA.

- First primary longer than or as long as primary-coverts,
wings over 90 mm., tail-feathers with buff spots at
tip *P. collaris*, p. 485
- First primary much shorter than primary-coverts,
wings under 80 mm., tail-feathers without buff spots
at tip *P. modularis*, p. 488

PRUNELLA COLLARIS**198. *Prunella collaris collaris* (Scop.)—THE ALPINE ACCENTOR.**

STURNUS COLLARIS Scopoli, Annus I, Historico-Natur., p. 131 (1769—Carinthia).

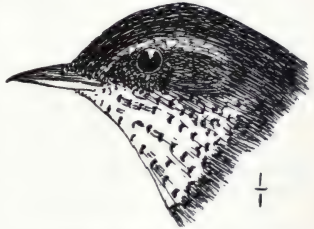
Accentor alpinus, Seeböhm, Hist. Brit. B., I, p. 501 (also MacGillivray, Hewitson, etc.).

Accentor collaris (Scopoli), Yarrell, I, p. 296; Saunders, p. 95.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head,

crown and nape ashy grey-brown faintly streaked dark brown; mantle dark brown, feathers edged greyish-brown; scapulars same, but feathers edged rufous-brown; back and rump much as crown but not so ashy; upper tail-coverts brown tinged varying amount of rufous-brown, with dark brown shaft-streaks varying in width and whitish tips usually with a dark brown penultimate band

(whiteness of tips and markings of upper tail-coverts are variable); lores and below eyes brown spotted whitish; ear-coverts brown not so greyish-brown as sides of neck; chin and throat greyish-white, feathers tipped and with a bar of black-brown giving throat a spotted appearance; upper-breast grey-brown, feathers at sides tinged rufous and some feathers often with a very faint dark brown penultimate bar; sides of lower-breast and belly and flanks chestnut, feathers edged white, narrowly on sides of breast, broadly on flanks, lower feathers of which become rufous black-brown in their centres; centre of lower-breast and belly grey-brown, feathers tipped buffish-white and with faint dark brown penultimate bands; under tail-coverts rufous black-brown broadly edged white; under wing-coverts and axillaries brownish-grey often tinged rusty-pink, feathers tipped whitish and with narrow subterminal dark bands; tail-feathers black-brown, narrowly edged grey-brown, tips of outer webs with small buff edging, tips of inner webs of central



The Alpine Accentor (*Prunella c. collaris*).

feathers with large buff edging and a much clearer, paler and often whitish, semicircular tip on inner webs of rest of tail-feathers ; primaries dark brown, outer and inner webs narrowly edged buff with a rather broader and paler mark at tips of feathers ; secondaries blacker brown more broadly edged rufous-buff, inner feathers with glossy-black centres broadly edged rufous-brown and with whitish mark at tip ; primary-coverts black tinged brown, very narrowly edged greyish and with broader white edging at tip of outer webs ; greater coverts black, edged widely on basal portion rufous grey-brown and with conspicuous white spots at tips of outer webs ; median coverts same but without grey-brown edgings and inner feathers with very small buffish-white tips ; lesser coverts grey-brown. This plumage is acquired by complete moult Aug.-Nov. *Summer*.—No moult and very little change by abrasion but edgings of secondaries become paler and white tips of coverts much restricted by wear.

Nestling.—(Not examined.)

Juvenile.—Upper-parts much as adult but browner and duller, feathers of mantle edged browner, not so grey, and those of scapulars not so rufous, upper tail-coverts with dark brown centres edged paler brown and with greyish-white tips ; chin and throat pale grey tinged buffish, tips of feathers rather darker but with no definite spotted appearance ; breast, belly, flanks and under tail-coverts feathers with dark brown centres and broad buffish fringes ; wing-feathers and tail-feathers as adult ; primary-coverts and greater and median coverts as adult but browner and tips buffish, not so white.

First winter and summer.—Like adults but primary-coverts and greater wing-coverts browner and tips more buffish, not so white, but difficult to distinguish with certainty. The juvenile body-feathers, lesser and median wing-coverts are moulted July-Oct. but apparently not the greater coverts and not wing-feathers, primary-coverts nor tail.

Measurements and structure.—♂ wing 98-108 mm., tail 59-67, tarsus 23-25.5, bill from skull 16-17 (12 measured). ♀ wing 97-106. Primaries : 1st 4-10 mm. shorter than primary-coverts, 3rd longest, 4th usually as long but sometimes 1 mm. shorter, 2nd 1-5 shorter, 5th 1-4 shorter, 6th 6-9 shorter ; 3rd to 6th emarginated outer webs. Secondaries about 2 mm. shorter than 10th primary, tips fairly square. Tail fairly square, outermost pair slightly shorter than rest, 12 feathers, tips fairly square. Upper tail-coverts long, longest feathers being two-thirds length of tail. Bill flat and broad at base, tapering rather abruptly to point, which is more compressed. Nostrils slit-like being covered by membrane. A few fine nasal bristles and some longer and stronger rictal bristles.

Soft parts.—Bill brown-black, base and most of lower mandible yellow ; legs and feet pink-brown ; iris hazel.

CHARACTERS AND ALLIED FORMS.—*P. c. subalpina* (Greece, Balkans) has paler and greyer upper-parts and paler chestnut flanks; *P. c. caucasica* (Caucasus, Asia Minor) much like *P. c. collaris*, but upper-parts paler and less streaked but not so grey as in *P. c. subalpina*; *P. c. rufilata* (Turkestan) much like *P. c. caucasica* but chestnut of sides of breast and flanks more uniform and more extensive white edgings of feathers being narrow; *P. c. tibetana* (eastern Tibet) is more like typical form but has rump rusty-brown and upper tail-coverts with considerable amount of chestnut; *P. c. erythropygia* (Japan, east Siberia, north China) is like last but much darker; *P. c. nipalensis* (Himalayas) is still darker and feathers of mantle have rufous-brown edgings; *P. c. ripponi* (Yunnan) much like last but upper-parts very dark grey, not so brown and edgings of feathers of mantle, rump and upper tail-coverts not so rufous-brown. Spotted chin and throat and double row of white spots on wing-coverts distinguish the species.

FIELD-CHARACTERS.—A most retiring, quiet species, frequently overlooked even at close quarters owing to its unobtrusive habits and leisurely creeping movements, which are akin to those of Hedge-Accentor. Plumage is more distinctive and handsome than pictures prepare one for, though harmonizing wonderfully with bare rock and stones. In the Pyrenees and Alps can usually be found just below the snow-line. The young are clamorous and reveal their presence, and when feathered will leave the nest in a "stream" if disturbed. The parent is excessively solicitous, and even before an egg is laid, will reveal the nest by walking up to and around it in one's presence. (H. M. Wallis.)

BREEDING-HABITS.—Met with at high elevations. *Nest*.—Generally in cleft of rock often sheltered by low scrub, but occasionally among branches of small firs; built of bents, moss, roots, and a few lichens and feathers, lining chiefly moss, but according to some writers also hair. *Eggs*.—4-5, rarely 6, pale blue. Average of 68 eggs, 23.2×16.5 mm. *Breeding-season*.—From beginning of June onward. Said to be double brooded.

FOOD.—Consists largely of spiders; also insects, coleoptera (*Curculio*, *Elater*, *Scaphidema*, *Felonia*, etc.), orthoptera (*Forficula*), hymenoptera (ants and larvæ), and diptera. Naumann includes small snails. Seeds and berries of many plants and bushes also taken.

DISTRIBUTION.—*Great Britain*.—Twenty obtained or satisfactorily identified between Aug. and Jan. (once in March) in following counties: Cornwall (1), Devon (4), Somerset (1), Gloucester (1), Hants. (1), Surrey (1), Sussex (2), Essex (1), Cambs. (2), Suffolk (2), Yorks. (1), Warwick (1), Carnarvon (1), Fair Isle (Shetlands) (1).

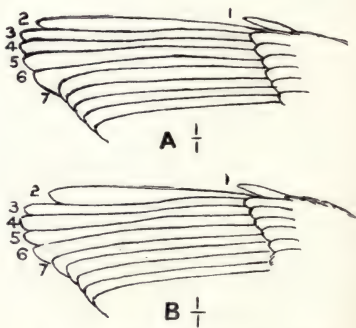
DISTRIBUTION.—*Abroad.*—Mountain-systems of south and central Europe and Mediterranean Islands (casual in Malta), but replaced by an allied race in south-east Europe (Dalmatia to Greece), and by others in Caucasus, Asia Minor and other parts of Asia.

PRUNELLA MODULARIS

199. *Prunella modularis modularis* (L.)—THE CONTINENTAL HEDGE-SPARROW.

MOTACILLA MODULARIS Linnæus, Syst. Nat., ed. x, i, p. 184 (1758—*"Habitat in Europa."* Restricted typical locality : Sweden).

DESCRIPTION.—Like *P. m. occidentalis* and moults same but differs in being paler and purer grey on throat and breast especially in male, in belly being usually whiter and in 2nd primary being longer in proportion to 7th ; 2nd being 2-4 and sometimes as much as 5-6 mm. longer than 7th, 7th 6-9 mm. shorter than longest primary, 6th primary 1-3 mm. shorter than longest, usually shorter than in *P. m. occidentalis*. Colour of upper-parts is variable in shade, some being darker and more rufous than others both in this form and *P. m. occidentalis*, but upper-parts of *P. m. modularis* are usually brighter rufous-brown than in *P. m. occidentalis*.



A. The Continental Hedge-Sparrow (*Prunella m. modularis*). B. The British Hedge-Sparrow (*P. m. occidentalis*). Note longer 2nd and shorter 7th primaries in *P. m. modularis*.

BREEDING-HABITS.—Very similar to those of British form : separate description unnecessary. *Eggs.*—Also similar. Average of 83 by Rey, 19.5×14.4 mm. *Breeding-season.*—From mid-April onward.

FOOD.—Probably very similar to that of British form, chiefly small insects and seeds. Naumann mentions *Solanum*, *Polygonum*, *Carex*, *Amaranthus*, etc.

DISTRIBUTION.—*Great Britain.*—Passage-migrant and probable winter-resident. Is only form proved to visit Fair Isle, where it is regular, first week April to mid-May (earliest March 26, latest May 29) and Sept. 23 to Nov. 19, most numerous last week Oct. to

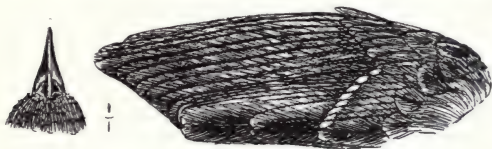
end first week Nov. Probably regular in small numbers elsewhere on east and perhaps west coasts, but only other specimens so far proved are Muckle Flugga Lt. (Shetland) one April 6, 1918 (*Scot. Nat.*, 1919, p. 127), Auskerry (Orkney), one Oct. 1, 1913 (*t.c.*, 1914, p. 8), Butt of Lewis (O. H.) one Sept. 22 and one Oct. 9, 1914 (*t.c.*, 1915, p. 205), Isle of May (Forth) one (out of six) Sept. 24 and one Oct. 9, 1912 (*t.c.*, 1913, pp. 51, 53), Spurn (Yorks.) one Sept. 7, 1882 (*Brit. B.*, III, p. 314) and one Oct. 9, 1911 (*t.c.*, VI, p. 121), Blakeney (Norfolk) one Oct. 17, 1919 (*t.c.*, XIII, p. 128).

DISTRIBUTION.—*Abroad.*—Europe from about lat. 70° north to Mediterranean, east to Black Sea and Urals, in south Spain and south-east Europe only winter-visitor. Partly migratory, visiting (rarely) north-west Africa, Asia Minor, and Syria. Replaced in Portugal by closely-allied form.

200. *Prunella modularis occidentalis* (Hart.)—THE BRITISH HEDGE-SPARROW.

ACCENTOR MODULARIS OCCIDENTALIS Hartert, *Brit. B.*, III, p. 313 (March, 1910—British Isles).

Accentor modularis (Linnæus), Yarrell, I, p. 301; Saunders, p. 93.



The British Hedge-Sparrow (*Prunella m. occidentalis*).

DESCRIPTION.—*Adult male. Winter.*—Crown, nape and hind-neck smoky-grey washed brown and streaked brown-black; mantle and scapulars varying from warm brown to rufous-brown boldly streaked black-brown; back, rump and upper tail-coverts varying from uniform olivaceous-brown to rufous-brown with an olivaceous tinge; lores and under eyes brown-grey, feathers with short mesial streaks of whitish-grey; line over eye and sides of neck slate-grey tinged brown; ear-coverts brown streaked whitish; chin, throat, breast and axillaries slate-grey, hoary on chin and very narrowly tipped brown on breast; sides of breast and flanks yellowish-brown to rufous-brown streaked on flanks black-brown and rufous-brown; belly greyish-white; under tail-coverts dark brown widely fringed buff; tail black-brown fringed on outer webs rufous-brown; primaries and secondaries same but inner webs fringed greyish-white and innermost secondaries with broader rufous-brown fringes

on both webs and small buff marks at tips ; primary-coverts fringed rufous-brown and tipped black-brown ; greater coverts as secondaries but with buff marks at tips more distinct ; median coverts same but with very indistinct pale marks at tips ; lesser coverts rufous-brown. This plumage is acquired by complete moult in Aug.-Oct. *Summer*.—No moult. Abrasion causes upper-parts to become rather more striated, and brown tips wear off breast-feathers.

Adult female.—Like male but breast decidedly browner not so grey the buffish-brown tips of the feathers being wider and more distinct.

Nesting.—Down black, fairly long. Distribution, inner supra-orbital, occipital, humeral, spinal, ulnar and femoral. Mouth inside bright orange, two lateral black spots on tongue-spurs ; externally flanges whitish-pink.

Juvenile.—Somewhat resembling adult but crown browner ; feathers of nape and sides of neck fringed buffish and those of rest of upper-parts more yellow-brown not so rufous ; chin and throat greyish-white speckled dark grey ; breast, flanks and under tail-coverts yellowish-buff to buff-brown, prominently streaked brown-black ; centre of belly dull greyish-white ; tail- and wing-feathers as adult, but buff marks at tips of median coverts more distinct.

First winter and summer.—Like adults. The juvenile body-feathers, lesser and median wing-coverts, two or three inner greater coverts, one or two innermost secondaries, sometimes, but apparently not always, the tail-feathers are moulted Aug.-Oct. but not primaries, primary-coverts nor rest of secondaries and greater coverts.

Measurements and structure.—♂ wing 64–71 mm., tail 55–61, tarsus 20–22, bill from skull 13–14 (12 measured). ♀ wing as male. Primaries : 1st equal to, or 1–2 mm. shorter than, primary-coverts, 4th and 5th longest, 3rd and 6th sometimes as long but usually .5–2 mm. shorter, 2nd 4–7 shorter and either equal to or 1–2 longer or shorter than 7th (5–7 shorter than longest) ; 3rd to 6th emarginated outer webs. Secondaries about equal to 10th primary, tips fairly square. Tail fairly square, 12 feathers, tips sharply sloped off giving tail a slightly forked appearance. Bill rather flat and broad at base, tapering rather abruptly to point which is more compressed. Nostrils slit-like being covered by membrane. A few very fine and very short nasal bristles and some longer and stronger rectal bristles.

Soft parts.—Bill black-brown, base of lower mandible pinkish-brown ; legs and feet pinkish-brown ; iris brown.

CHARACTERS AND ALLIED FORMS.—For differences of *P. m. modularis* see under that form ; *P. m. orientalis* (Transcaucasia) is stated to have sides of head and neck browner not so grey and back more rufous ; *P. m. blanfordi* (south-west Persia) is stated to have uniform

grey-brown crown with no dark centres to the feathers; *P. m. obscura* (Portugal) is very dark on upper-parts and white on belly. Streaked upper-parts, slate-grey throat and breast and want of white in tail distinguish the species.

FIELD-CHARACTERS.—Frequents open situations rather than woodlands; gardens, shrubberies and hedgerows being favourite haunts. Plumage without conspicuous feature: general coloration—ochreous-brown, broadly streaked with umber—and pale legs and slender bill suggest a Pipit, but build is stouter, there is no white in tail, and, in adult, head, neck and fore-breast are slate-grey, whilst its general demeanour is unassuming. It hops instead of running, and often indulges in spasmodic jerking of the wings. Song, a clear little strain, not so robust as Wren's, nor so plaintive as Robin's, noticeable in winter and early spring when most birds are silent. Call-note, a high-pitched piping and plaintive "peep, peep." This call somewhat lengthened functions too as alarm-note.

BREEDING-HABITS.—Haunts gardens, hedgerows, shrubberies, building in hedges and evergreens, also in stick heaps, and occasionally in ivy, on banks and in old nests of other birds (Blackbird, Thrush, Swallow). *Nest*.—Twigs in foundation, moss, bents, a few dead leaves, roots, etc., lined with moss and hair or wool; feathers occasionally freely used. *Eggs*.—Usually 4-5, occasionally 6, normally rather deep blue; very rare variety white. Average size of 100 eggs, 19.9×14.7 mm. *Breeding-season*.—Normally from April onwards, but occasionally in winter months, and as late as August. Two or three broods. *Incubation*.—12-13 days, 14th in incubator (W. Evans).

FOOD.—Spiders, insects; coleoptera (*Rhyncophoridae*, *Apion*, *Scolytus*, *Helophorus*, etc.), larvæ of lepidoptera (*Tortrix*, etc.); small worms; and seeds of many plants (*Spergula*, *Polygonum*, *Atriplex*, *Lamium*, *Aira*, *Rumex*, *Ranunculus*, *Stellaria*, *Geranium*, *Plantago*), etc.

DISTRIBUTION.—Confined to British Isles. *British Isles*.—Resident. Generally distributed, but scarcer (though increasing of recent years) in extreme north of Scottish mainland, scarce in Orkneys, does not breed Shetlands, common Stornoway (Lewis), scarce elsewhere in O. Hebrides, but has bred Uist.

MIGRATIONS.—*Great Britain*.—Southward movement latter half Sept. with emigration from south coast, at any rate in some years, early Oct. to beginning Nov. with passage through Channel Islands. Well marked movement east coast (northern isles to Suffolk) second week Sept. to first week Nov., though certainly that of British race, very probably includes also passage-migrants of Continental form. Similar movement probable, west coast, but very few observations at present. Slight indications also of winter weather-movements. No records of spring immigration. Passage-

movement east coast (Spurn to northern isles) third week March to mid-May very probably includes birds of both races.

FAMILY TROGLODYTIDÆ.

Small and middle sized birds with short tails, short but well developed 1st primary. Legs and feet strong, claws large, bill narrow, elongated, nostrils free of feathers, just distal to prolonged frontal feathering a short membrane. Rictal bristles wanting or weak and few. Wings short and rounded, plumage thick and soft. Rectrices soft, number variable. Sexes as a rule not different. Nests large, ball-like or filling out cavities, with lateral entrance. Eggs of all Palæarctic forms white, with or without reddish spots. About 20 genera, most numerous in Neotropical region, wanting in Australian and Pacific regions.

Key to genera of family TROGLODYTIDÆ.

Smaller, wings under 70 mm., tail and wings barred : *Troglodytes*, p. 492

Larger, wings over 80 mm., tail and wings not barred : *Cinclus*, p. 497

Genus TROGLODYTES Vieill.

TROGLODYTES Vieillot, Hist. Nat. Ois. Amér. Sept., II, p. 52 ("1807"—Type by subsequent designation by Baird, Pacific Rail Road Rep., IX, p. 367, 1858: *T. ædon*).

In view of intergradation from short-tailed and short-billed European Wrens to long-billed and long-tailed American forms there can be no advantage in separating them into several genera. We therefore continue to call the European Wrens *Troglodytes*. They are strikingly different from all other European birds by their small size, short tail, and barred plumage combined. Tail-feathers 12, soft and narrow. Claws strong, curved, hind-toe large. Wings short and rounded. Bill slightly curved, without notch. Nostrils oval, partly covered by membrane. Tarsus in front with distinctly separated large scutes. Juveniles very much like adults. A number of species in North America, one in a great number of subspecies in Europe, north to Iceland, in north-west Africa, and in Asia to farthest east from Commander Islands and eastern Siberia to China and Formosa.

TROGLODYTES TROGLODYTES

201. *Troglodytes troglodytes troglodytes* (L.)—THE WREN.

MOTACILLA TROGLODYTES Linnaeus, Syst. Nat., ed. x, i, p. 188 (1758—Europe. Restricted typical locality: Sweden).

Troglodytes parvulus K. L. Koch, Yarrell, I, p. 460 (part); Saunders, p. 115 (part).

DESCRIPTION (Plate 17).—*Adult male and female. Winter.*—Whole upper-parts rufous-brown, amount of rufous varying considerably individually; fore-head, crown and nape usually darker and less rufous than rest of upper-parts and always uniform; upper mantle usually same but sometimes feathers barred black-brown; rest of upper-parts with all the feathers barred black-brown but extent and intensity of barring varies individually; rump and upper tail-coverts usually most rufous and most barred; scapulars sometimes with a few whitish marks and feathers of rump with concealed whitish marks; from nostrils, over and extending behind eye a narrow creamy-buff to whitish stripe; lores and ear-coverts creamy-buff to whitish speckled and streaked brown; chin, throat and breast creamy-buff to whitish, feathers more or less edged with darker buff and sometimes minutely speckled on breast with brown; flanks and belly same but closely barred rufous-buff and dark brown (N.B., amount of barring and intensity of buff on under-parts varies considerably); under tail-coverts rufous barred dark brown and tipped whitish; axillaries and under wing-coverts whitish to pale buff usually freckled or barred with brown but sometimes uniform; tail rufous-brown, finely barred black-brown; primaries and secondaries brown-black, inner webs narrowly edged whitish, outer webs of outer five primaries barred whitish and rufous-buff, 6th with more rufous and rest and secondaries rufous-brown with narrow brown-black bars, innermost secondaries with both webs rufous-brown with narrow brown-black bars; primary-coverts and rest of wing-coverts rufous-brown with narrow black-brown bars and median coverts with conspicuous white spot at tip and a pale line on shaft of most of the feathers. This plumage is acquired by complete moult from Aug.-Oct. *Summer.*—No moult and very little change in coloration by abrasion though under-parts become rather paler and more whitish.

Nestling.—Down, greyish sooty-black, rather short and scanty especially on spinal tract. Distribution, inner supra-orbital, occipital and spinal. Mouth inside bright yellow, no spots, externally flanges very pale lemon-yellow.

Juvenile.—Much like adults, upper-parts more rufous and feathers of fore-head, crown and nape with very narrow black-brown borders, giving these parts a less uniform appearance than in adult; superciliary stripe not so well marked as in adult; ear-coverts usually rather more streaked with dark brown than in adult; chin, throat and breast more buff than in adult and feathers narrowly margined brown, giving a less uniform and more mottled appearance; flanks and belly more rufous-buff than in adult and with few and less conspicuous dark brown bars; under tail-coverts rufous, barred brown but without white tips of adult; tail and wing-feathers and wing-coverts as adult but median coverts without the conspicuous white spots at tip though they usually have an indistinct pale mesial streak.

First winter and summer.—Like adults and there seem no constant differences to distinguish them. The juvenile body-feathers, lesser and median wing-coverts, 3 or 4 inner greater coverts, sometimes innermost secondary and often (possibly always) the whole tail are moulted Aug.-Oct. but not primaries, primary-coverts, or rest of secondaries, nor rest of greater wing-coverts.

Measurements and structure.—♂ wing 46–50 mm., tail 30–33, tarsus 17–18.5, bill from skull 12–14 (12 measured). ♀ wing 43–48. Primaries : 1st about half as long as 2nd, 2nd 4–7 mm. shorter than longest, 3rd, 4th and 5th about equal and longest but 3rd often 1–2 mm. shorter, 6th .5–1.5 shorter, 7th 2–4 shorter ; 3rd to 6th emarginated outer webs. Secondaries a little shorter than 10th primary and about equal to 2nd, tips rounded. Tail rounded, outermost pair markedly short, 12 feathers, tips sharply sloped off. Bill fine and compressed, culmen slightly curved. Nostrils slit-like being covered by membrane. No nasal bristles but a few very fine and very short rictal bristles. Feet and claws strong and latter curved.

Soft parts.—Bill : upper mandible, black-brown, lower pale horn-colour ; legs and feet dull brownish-flesh ; iris dark brown.

CHARACTERS AND ALLIED FORMS.—For differences of *T. t. hirtensis* and *zelandicus* see under those forms ; *T. t. borealis* (Færoes) is like *T. t. hirtensis* in size but intermediate in coloration and barring between that form and *T. t. troglodytes* ; *T. t. islandicus* (Iceland) is larger than *T. t. borealis* and darker brown on upper-parts ; *T. t. kabyloorum* (north-west Africa, Balearic Is.) is very close to *T. t. troglodytes* but slightly less rufous on upper-parts and less barred on belly ; *T. t. koenigi* (Corsica, Sardinia) much like last with longer 2nd primary ; *T. t. cypriotes* (Cyprus) with longer bill and more barred under-parts ; *T. t. hyrcanus* (Caucasus, north Persia) is paler on upper-parts than *T. t. troglodytes* but not so pale as *T. t. pallidus* (Turkestan, Transcaspia) ; *T. t. nipalensis* (Sikkim, Nepal), *T. t. tibetana* (Tibet), *T. t. neglectus* (western Himalayas), *T. t. dauricus* (Transbaikal) and a number of other forms in China and Japan are very dark on upper-parts and much barred on under-parts ; *T. t. pallescens* (Commander Is. Kamtschatka) is large and pale ; other forms inhabit N. America. Short tail, small size, and barring distinguish Wren specifically from other British birds.

FIELD-CHARACTERS.—Ubiquitous, occurring at all seasons in very diverse surroundings. At home equally in a lowland hedgerow, on precipitous rock-faces of our highest mountains, or creeping about the bole of some large tree. Its fearless demeanour, diminutive proportions, short and narrow tail—usually upturned—and warm brown coloration, are distinctive. Flight, performed by quick beats of short wings, direct and rapid but seldom sustained. Song a boisterous outburst, something like Hedge-Sparrow's but fuller,

and remarkably loud for size of bird. A sharp clicking "chit, chit," used by old and young, functions as call and alarm-note, but under stress of excitement a hoarse "ter-tzer-tzererrrr" is uttered.

BREEDING-HABITS.—Found almost everywhere from sea-level up to mountain-tops. *Nest.*—In very varied sites; in hedges, ivy, banks, sides of stacks, thatch, old nests of other birds (Sparrow, Swallow, House-Martin) crevices of rock, and holes of trees. Built of moss, dead grass, dead leaves, bracken, etc., neatly domed with rounded entrance at side and lined warmly with feathers. Male builds several nests, but lining is only added by the female to that which is used for breeding. *Eggs.*—Usually 5-6, sometimes 7, occasionally 8 to 11 and even 14 and 16 on record, white, spotted rather sparingly with brownish-red chiefly at big end. Markings sometimes absent or almost so. Average of 100 eggs, 16.5×12.5 mm. *Breeding-season.*—From latter half April onward; double brooded. *Incubation.*—Period 14-16 days from last egg (W. Evans).

FOOD.—Insects: coleoptera, lepidoptera (larvæ of Geometræ and Noctuæ) diptera (larvæ of Tipulidæ), neuroptera, etc. Also spiders, aphides and seeds.

DISTRIBUTION.—*British Isles.*—Resident. Generally distributed, except where replaced by local forms (*ut infra*).

MIGRATIONS.—*British Isles.*—Passage-movements along east coast (Orkneys to Channel) (only one record Fair Isle and none certain Shetlands) mid-Sept. to mid-Nov. and west coast (Hebrides to N. Wales and north, east and west coasts Ireland) same period. Emigration from south coast England and Ireland with passage through Channel Islands, whether of British residents, passage-migrants or both uncertain, second week Oct. to first week Nov. Weather-movements in winter Orkneys and western isles frequent. Return migration lasts to early May, beginning in western isles and Orkneys in early March, but not recorded as yet from elsewhere on east, west and south coasts or south-east coast Ireland till second week April.

DISTRIBUTION.—*Abroad.*—Europe from north Scandinavia to Urals in east, and shores of Mediterranean, but replaced by allied forms on some islands in north Atlantic Ocean, in Mediterranean, north-west Africa, Caucasus and Persia, Turkestan, and other parts of north and east Asia to Japan and Kuriles, as well as North America.

202. *Troglodytes troglodytes hirtensis* Seeb.—THE ST. KILDA WREN.

TROGLODYTES HIRTENSIS Seeböhm, Zoologist, 1884, p. 333 (St. Kilda).
Troglodytes parvulus K. L. Koch, Yarrell, 1, p. 460 (part); Saunders, p. 115 (part); *T. t. hirtensis* Seeb., Hartert, Brit. B., 1, p. 219.

DESCRIPTION (Plate 17).—*Adult male and female*.—Fore-head, crown and nape uniform grey-brown, not so dark or rufous as in Common Wren; rest of upper-parts brighter brown, but not rufous and barring considerably heavier, more conspicuous and more extended on upper part of mantle than in Common Wren; superciliary stripe whiter; lores and ear-coverts whiter speckled and streaked dark brown; under-parts paler with little buff and dark bars on flanks and belly more blackish and more conspicuous and more often extending up sides of breast than in Common Wren; under tail-coverts not nearly so buff, black barring more marked and white tips not so noticeable; axillaries and under wing-coverts greyish-white lightly barred blackish; tail, wing-feathers and wing-coverts not rufous, blackish barring darker, heavier and more conspicuous and pale barring of outer primaries whiter and bars narrower and more in form of spots. Moults as in Common Wren. *Summer*.—Abrasion makes upper-parts paler, more grey-brown and under-parts paler.

Nestling.—(Not examined.)

Juvenile.—Upper-parts much resembling juvenile Common Wren but not so rufous (general colour much as in adult Common Wren), barring rather more distinct than in juvenile Common Wren; superciliary stripe and ear-coverts as in juvenile Common Wren as also rest of under-parts but margins of feathers considerably broader and darker and flanks and belly less rufous; tail, wings and wing-coverts like adult but median coverts lacking white spots as in juvenile Common Wren.

Measurements and structure.—♂ wing 51-55, tail 30-37, tarsus 18-21, bill from skull 13.5-16 (11 measured). ♀ wing 48-52. Structure as Common Wren, but bill thicker and stronger.

BREEDING-HABITS.—Most birds breed on face of cliffs, sheltered by grasses, etc., but also among loose stones and in roofs of "cleats" or sheds. *Nest*.—Rather large, but very similar to that of Common Wren, built of local material. *Eggs*.—4 to 6, larger than mainland form, but similar, sometimes boldly marked. Average of 39 eggs, 18.2×13.8 mm. *Breeding-season*.—Apparently June and July.

FOOD.—No definite information, but probably like Shetland Wren picks up small crustacea from shore.

DISTRIBUTION.—Confined to St. Kilda (O. Hebrides), where it is resident in all islands of group.

203. *Troglodytes troglodytes zetlandicus* Hart.—THE SHETLAND WREN.

TROGLODYTES TROGLODYTES ZETLANDICUS Hartert, Vög. pal. Fauna, 1, p. 777 (1910—Shetland Islands).

Troglodytes parvulus K. L. Koch, Yarrell, 1, p. 460 (part); Saunders, p. 115 (part); *T. t. zetlandicus*, Hartert, Brit. B., iv, p. 134.



(WRENS HALF, DIPPERS 2-5THS, NATURAL SIZE.)

1, The Wren (*Troglodytes t. troglodytes*). 2, The St. Kilda Wren (*T. t. hirtensis*). 3, The Shetland Wren (*T. t. zetlandicus*). 4, The Black-bellied Dipper (*Cinclus c. cinclus*). 5, The British Dipper (*C. c. britannicus*). 6, The Irish Dipper (*C. c. hibernicus*).

[Face p. 496.]

DESCRIPTION (Plate 17).—*Adult male and female*.—Upper-parts as in Common Wren but considerably darker especially crown and nape which frequently have a blackish appearance, bars of rest of upper-parts blacker than in Common Wren; brown markings on lores and ear-coverts darker; chin, throat and breast darker brownish-buff and not whitish and barring extending farther up sides of breast than in Common Wren; wings darker and under wing-coverts and axillaries more distinctly barred than in Common Wren.

Nestling and juvenile.—(Not examined.)

Measurements and structure.—♂ wing 50-54 mm., tail 30-36, tarsus 17-20, bill from skull 14-16 (14 measured). ♀ wing 48-51. Structure as Common Wren but bill thicker and stronger.

BREEDING-HABITS.—Usually breeds in crevices in face of cliff or under shelter of turf on steep bank. *Eggs*.—Usually 6.

FOOD.—Saxby records small insects, earthworms and sandhoppers (*Gammarus*). Florence includes small crustacea, larva of beetle and seaweed.

DISTRIBUTION.—Confined to Shetlands, where it is resident. The Wren inhabiting Fair Isle appears to differ from this form.

[NOTE.—WRENS from Fair Isle and from Outer Hebrides are intermediate between this form and *T. t. troglodytes* and are often as dark as *T. t. zelandicus* in colour. Ten males from Fair Isle measure: wing 48-54 mm., tail 29-32, tarsus 18-19, bill 13-15]

Genus CINCLUS Borkh.

CINCLUS Borkhausen, Deutsche Fauna, I, p. 300 (1797—Monotype: *Cinclus hydrophilus* Borkh. = *cinclus* L.).

Dippers agree with Wrens in their short, rounded wing, short tail, copious plumage, nesting-habits, notes, musty smell and other peculiarities. They are much larger, body being almost as large as that of a Redwing; nostril covered by membrane, short feathers of fore-head extending on bill to nostrils, no rictal bristles. Bill straight, slightly depressed above nostrils. Tail short, square or very slightly rounded, tail-feathers 12, tips square. Tarsus long and strong, in front with a lamina, only divided into 2 scutes near base of toes. Plumage thick. Sexes alike, young different. Eggs unspotted white. Inhabitants of mountainous countries, Europe, northern Asia to Himalayas, China, and Formosa; western North America and Andes to Tucuman in Argentina.

CINCLUS CINCLUS

204. *Cinclus cinclus cinclus* (L.)—THE BLACK-BELLIED DIPPER.

STERNUS CINCLUS Linnæus, Syst. Nat., ed. x, i, p. 168 (1758—"Habitat in Europa." Restricted typical locality: Sweden).

Cinclus melanogaster, Yarrell, I, p. 244 (in text); Saunders, p. 97 (in text).

DESCRIPTION (Plate 17).—*Adult and first winter and summer. Male and female.*—Upper-parts like *C. c. britannicus*; whole of lower-breast and belly black-brown usually with a tinge of chestnut-brown near white of upper-breast and very rarely with as much chestnut-brown as in some examples of *C. c. hibernicus*. In first winter birds the narrow dark fringes of white feathers of throat and breast are, as in *C. c. hibernicus*, rather darker and more marked than in *C. c. britannicus*.

Nestling.—(Not examined.)

Juvenile.—Like that of *C. c. britannicus* but upper-parts considerably paler slate-grey and feathers with less dark or broad edgings; under-parts white, blackish edgings of feathers being narrower.

Measurements and structure.—♂ wing 87-96.5 mm., tail 48-58, tarsus 27-30, bill from skull 21-23 (12 measured). ♀ wing 85-93. Structure as in *C. c. britannicus*.

BREEDING-HABITS.—Similar to those of British race, but nests more frequently under natural conditions on rocks and less often in walls and buildings. *Nest and Eggs.*—Also similar but clutches of 6 and 7 are recorded. Average of 54 eggs, 25.9×18.7 mm. *Breeding-season.*—Usually early in June in northern Scandinavia, but in April in the south.

FOOD.—Aquatic insect larvæ and freshwater crustacea as a rule but on high ffield Alston found it searching for insects on ground and met with diptera and coleoptera (Carabidæ) in stomachs. Gurney records *Gyrinus* in a Norfolk specimen.

DISTRIBUTION.—*England.*—Vagrant. Has occurred several times in Norfolk and Yorks. from Oct. to Feb. Examples stated to have been of this form have also been recorded from Lines., Suffolk, Essex, Notts., and Salop, and from Spiggie (Shetlands).

DISTRIBUTION.—*Abroad.*—Scandinavia and north Russia, Russian Baltic Provinces south to East Prussia where possibly not nesting after 1900. In winter in small numbers in north-east Germany and east Russia. Replaced by allied races in Germany, the Pyrenees, Spain, Alps and Italy, Corsica and Sardinia, north-west Africa, south-east Europe, Cyprus, the Caucasus, west and central Asia and Siberia.

205. *Cinclus cinclus britannicus* Tschusi—THE BRITISH DIPPER.

CINCLUS CINCLUS BRITANNICUS Tschusi, Orn. Jahrb., XIII, p. 69 (1902—Great Britain).

Cinclus aquaticus Bechstein, Yarrell, I, p. 241 (part); Saunders, p. 97 (part); *C. c. britannicus* Tsch., Hartert, Brit. B., I, p. 220.

DESCRIPTION (Plate 17).—*Adult male and female. Winter.*—Fore-head, crown and nape dark chocolate-brown; rest of upper-

parts including upper-tail coverts dark slate-grey, each feather broadly edged black-brown giving a somewhat mottled appearance; lores and ear-coverts as crown; short line immediately over eye and a few feathers under eye whitish; whole of chin, throat and upper-breast white; lower-breast and centre of belly chestnut-brown but lower part of belly black-brown, feathers marked with varying amount of rufous-brown and in very fresh plumage usually with very narrow greyish-white tips; flanks dark slate-grey marked dark brown; under tail-coverts dark slate-grey very narrowly tipped greyish-white and with a narrow subterminal rufous band; axillaries and under wing-coverts black-brown narrowly tipped whitish; tail-feathers blackish slate-grey with a brownish tinge; wing-feathers black-brown very narrowly tipped brownish-white, inner webs narrowly edged greyish-white and outer webs slate-grey, rather more broadly edged on innermost secondaries; primary-coverts black-brown very narrowly tipped pale brown; greater coverts black-brown outer webs edged slate-grey; median and lesser coverts black-brown tipped slate-grey. This plumage is acquired by complete moult July-Sept. *Summer*.—No moult. Abrasion of dark brown tips of feathers makes back, rump and upper tail-coverts paler slate-grey, chocolate-brown of crown and nape becomes paler, chestnut of breast becomes paler, while paler tips of feathers of vent, under tail-coverts and wing-feathers wear off as well as slate-grey edgings of wing-coverts, but there is no very marked difference.

Nestling.—Down dark smoke-grey, long and plentiful. Distribution, inner supra-orbital, occipital, humeral and spinal. Mouth inside orange-yellow, no spots, externally flanges whitish-yellow.

Juvenile.—Whole upper-parts dark slate-grey, feathers fringed black-brown; chin, throat and upper-breast white, each feather tipped black-brown, lower-breast same but feathers also with black-brown mesial streaks and feathers of belly brownish slate-grey with only the tips white fringed black-brown; under tail-coverts cinnamon-buff tipped and marked black-brown; axillaries and under wing-coverts dark slate broadly margined white; tail-feathers as adult; wing-feathers and wing-coverts as adult, but (except for lesser coverts) with whitish tips.

First winter and summer. Male and female.—Like adults but easily distinguished by whitish tips of wing-feathers especially secondaries and those of innermost greater wing-coverts and also by feathers of lower-breast and belly having more conspicuous greyish-white tips; some feathers of throat and upper-breast often have narrow and inconspicuous brown fringes but not always. These distinctions although quite clear in fresh plumage cannot usually be traced in summer owing to the tips being abraded. The juvenile body-feathers, lesser and median wing-coverts and innermost two to four greater coverts are moulted July-Sept. but not wing- or tail-feathers, primary-coverts nor rest of greater coverts.

Measurements and structure.—♂ wing 87–95 mm., tail 48–55, tarsus 28–31, bill from skull 21–23 (12 measured). ♀ wing 84–92 (one 80). Primaries: 1st equal to, or 1–4 longer than, primary-coverts, 2nd, 3rd and 4th longest and often equal but 2nd or 4th usually 1–2 mm. shorter than 3rd, 5th 2–5 shorter, 6th 7–10 shorter; 3rd to 5th emarginated outer webs. Secondaries rather shorter than 10th primary, tips rounded. Tail square but outermost pair slightly shorter than rest, 12 feathers, tips fairly square. Upper and under tail-coverts about three-fourths as long as tail. Bill strong and compressed. Nostrils slit-like being covered by membrane. No rictal or nasal bristles. Legs, feet and claws strong and last somewhat curved.

Soft parts.—Bill brown-black, tinged slate at base of lower mandible; legs and feet black-brown, front of tarsus and toes whitish-slate; iris brown.

CHARACTERS AND ALLIED FORMS.—*C. c. aquaticus* (France, Germany) is like *C. c. britannicus* on belly but has paler more slate-grey upper-parts; *C. c. pyrenaicus* (Pyrenees) has upper-parts like *C. c. aquaticus* but belly like *C. c. cinclus*; *C. c. meridionalis* (Alps, Balkans) is very near *C. c. aquaticus*, but crown is rather paler and belly brighter rufous; *C. c. sapsworthi* (Corsica, Sardinia) is much like *C. c. pyrenaicus* but crown and nape are paler brown; *C. c. minor* (Atlas Mts.) has longer bill, pale upper-parts and pale chestnut on belly; *C. c. caucasicus* (Caucasus, Asia Minor, north Persia) has chocolate-brown instead of chestnut-brown on lower-breast and belly; *C. c. cashmiriensis* is similar but darker brown on belly and this extends farther over flanks and brown of nape extends on to mantle; *C. c. rufiventris* (Lebanon) like *C. c. caucasicus* but more rufous on belly; *C. c. persicus* (south-west Persia) paler rust-brown belly and pale upper-parts, juvenile with very narrow dark tips to the feathers; *C. c. leucogaster* (west Siberia, Turkestan, Baikal) white extends over belly and chocolate-brown over mantle. The short tail, white “bib” in adult, and white under-parts and slate upper-parts, mottled with black-brown in juvenile, are distinctive specific characters.

FIELD-CHARACTERS.—In form and behaviour unlike any other native species. Identified at once by rotund form, pure white throat and breast, dark upper-parts, and chestnut band on belly. Frequents rivers, mountain torrents and tarns. Habit of curtsying on boulder, often in mid-stream, characteristic. Food obtained by wading, swimming and diving. Strong and rapid flight, performed by continuous beats of short wings, usually follows course of stream. Song a sprightly warble, often uttered in flight, bears some resemblance to Wren’s. Call-note a sharp “chit, chit.”

BREEDING-HABITS.—Haunts rapidly flowing streams, and nests on face of cliffs by waterside, in holes of walls, under bridges, in ivy

on tree-trunks, among tree-roots, under waterfalls or on stumps, but always over or close to water. *Nest*.—Cup-shaped and built of dry grasses, moss, etc., lined with dead leaves, generally of beech or oak, covered in and roofed with green moss with an overhung entrance at side. *Eggs*.—4-5, sometimes 6, pure white, and not glossy. Average size of 100 eggs, 26.2×18.1 mm. *Breeding-season*.—Usually from about end of March or early April, but occasionally in February. *Incubation*.—By both sexes; period 14-16 days, 15th day in incubator (W. Evans). Two or even three broods.

Food.—Mainly larvæ of aquatic insects: coleoptera (*Bembidium*, *Harpalus*, *Hydradephaga*, etc.); neuroptera, trichoptera, etc. (larvæ of Odonata, Ephemeridæ and Phryganeidæ); hemiptera (*Notonecta*). Also small aquatic mollusca and entomostraca (*Daphnia*). Bones of small fishes (minnow) once or twice recorded and observed to feed on dead trout.

DISTRIBUTION.—Confined to Great Britain. *England and Wales*.—Resident in west and north England and in Wales, where there are quickly running rocky streams, but only a rare vagrant to counties east of Dorset, Wilts., Gloucester, Hereford, Salop, Staffs., and Derby. Also very scarce in east Yorks., and Durham. *Scotland*.—Generally distributed except in Orkneys, where only twice occurred, and in Shetlands, where not yet recorded; in O. Hebrides breeds in Harris, Lewis, and Barra.

206. *Cinclus cinclus hibernicus* Hart.—THE IRISH DIPPER.

CINCLUS CINCLUS HIBERNICUS Hartert, Vög. pal. Fauna, I, p. 790 (1910—co. Cork, Ireland).

Cinclus aquaticus Bechstein, Yarrell, I, p. 241 (part); Saunders, p. 97 (part); *C. c. hibernicus*, Hartert, Brit. B., IV, p. 136.

DESCRIPTION (Plate 17).—*Adult and first winter and summer*. *Male and female*.—Like *C. c. britannicus* but crown and nape somewhat darker and rest of upper-parts decidedly so, tips of feathers being blacker and broader; under-parts with less chestnut-brown, colour being usually less bright and not extending so far down belly, which is black-brown but this character though very obvious in a series is not so constant individually as darkness of upper-parts. Thus intermediate between *C. c. cinclus* and *C. c. britannicus* in colour of belly but upper-parts darker than either of those forms. In first winter birds narrow dark fringes of white feathers of throat and breast are rather darker and more marked than in *C. c. britannicus*.

Nestling.—(Not examined.)

Juvenile.—Like that of *C. c. britannicus* but upper-parts darker, black-brown fringes of feathers being wider.

Measurements and structure.—♂ wing 86-95 mm., tail 47-56, tarsus 29-31, bill from skull 20-22 (11 measured). ♀ wing 82-90. Structure as in *C. c. britannicus*.

BREEDING-HABITS.—Similar to those of British race as are also *Nest* and *Eggs*, 4-5 in number. Average of 28 Irish eggs, 25.8×18.5 mm. *Breeding-season.*—From early March (occasionally in February) onward. Double brooded.

FOOD.—Probably very similar to that of British race. Thompson records larvæ of coleoptera, larvæ of Phryganeidæ, remains of crustacea and two species of stickleback (*Gasterosteus*).

DISTRIBUTION.—Confined to Ireland, where it is resident and generally distributed in suitable localities.

FAMILY HIRUNDINIDÆ.

The best defined family of British *Passeres*. Easily recognizable by the wide mouth (Swifts and Goatsuckers which also have very wide mouths have only 10 tail-feathers, besides many other differences—see p. 5 and under "*Cypseli*" and "*Caprimulgi*"), triangular flat beak, very short tarsus, weak feet with strong claws, very long nine-primaried wings with first primary so much reduced that it is outwardly invisible and can only be found by close investigation. Catch food in flight; almost cosmopolitan; the northern species strong migrants.

Key to genera of family HIRUNDINIDÆ.

- | | | |
|-----|--|--------------------------|
| 1 { | Tarsi and toes feathered | <i>Delichon</i> , p. 509 |
| | Tarsi and toes unfeathered | 2 |
| 2 { | Outer tail-feathers with large roundish white spots,
throat reddish | <i>Hirundo</i> , p. 502 |
| | Outer tail-feathers without white spots, throat white . | <i>Riparia</i> , p. 513 |

Genus HIRUNDO L.

HIRUNDO Linnæus, Syst. Nat., ed. x, i, p. 191 (1758—Type by subsequent designation, of Gray, List Gen. B., 1840, p. 8: *Hirundo rustica* L.)

Comprises the real Swallows. Tarsi and feet unfeathered, hind-claw shorter than the digit. Rictal bristles few and weak. Wings very long and pointed and reaching far beyond angle of tail-fork, first developed (technically second) primary longest. Tail forked, in adult bird lateral pair of tail-feathers greatly elongated and attenuated, terminal half almost filiform. Upper-parts glossy, fore-head and throat reddish. Eggs of British Swallow spotted, of *daurica* and others pure white. Numerous extra-limital species, all continents.

Key to species of genus HIRUNDO.

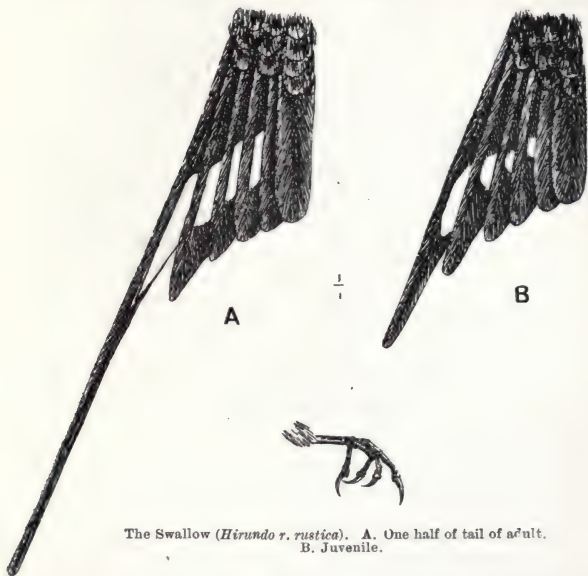
- | | |
|-------------------------|----------------------------|
| Rump like back. | <i>H. rustica</i> , p. 503 |
| Rump rufous | <i>H. daurica</i> , p. 507 |

HIRUNDO RUSTICA

207. *Hirundo rustica rustica* L.—THE SWALLOW.

HIRUNDO RUSTICA Linnaeus, Syst. Nat., ed. x, i, p. 191 (1758—Europe. Restricted typical locality: Sweden).

Hirundo rustica Linnaeus, Yarrell, II, p. 340; Saunders, p. 163.



The Swallow (*Hirundo r. rustica*). A. One half of tail of adult.
B. Juvenile.

DESCRIPTION.—*Adult male. Winter and summer.*—Fore-head dark chestnut; rest of upper-parts dark metallic-blue (feathers of nape and mantle with their concealed middle portions white, feathers of back of crown with these portions usually brown but occasionally buff and rarely chestnut); lores black; ear-coverts, sides of neck and broad band across lower-throat dark metallic-blue with more or less black showing and often some chestnut feathers intermixed; chin and upper-throat dark chestnut; rest of under-parts varying from rufous-buff to dark creamy colour; under tail-coverts as belly but often deeper buff and sometimes with fine dark shaft-streaks and occasionally two longest feathers tipped glossy green; axillaries and under wing-coverts as belly but feathers tipped more rufous-buff; tail-feathers black-brown glossed metallic-

green, central pair uniform, rest with broad white patch on inner web, in outer pair white is extended up shaft to a point; primaries and secondaries black-brown glossed dark metallic-green on outer webs and tips, innermost secondaries dark metallic-blue and inner primaries and other secondaries often with some metallic-blue; primary-coverts dark metallic-green often shaded metallic-blue; wing-coverts dark metallic-blue, innermost feathers of greater and median coverts with buff or greyish mark at tip of inner web. This plumage is acquired by a very gradual moult, commencing in Europe with body-feathers and sometimes median and lesser wing-coverts in Aug. (exceptionally July) and continuing in Africa, whence specimens in every month from Sept. to March (exceptionally April) are in various stages of complete moult. Out of large number examined I have not seen one taken in Europe which was moulting its remiges or rectrices. Feathers of under-parts vary much in colour individually but are more creamy or buff when freshly moulted and become paler and in some individuals nearly white by abrasion. Abrasion also causes loss of gloss, especially noticeable on crown, throat-band, wings and tail.

Adult female.—As male but throat-band not so metallic-blue being browner and usually with more chestnut feathers intermixed, under-parts average whiter than male, but many individuals as buff; outermost pair of tail-feathers usually shorter than in male (see "Measurements").

Nestling.—Down grey, fairly long, but scanty. Distribution, inner supra-orbital, occipital, humeral and spinal. Mouth inside lemon-yellow, no tongue-spots, externally flanges whitish (C. B. Ticehurst, *Brit. B.*, II, p. 191).

Juvenile.—Resembling adult, but chestnut patch on fore-head smaller and paler, but extending on sides of crown in an ill-defined narrow streak above lores; rest of upper-parts browner and with less metallic-blue than in adult (especially on crown), feathers of rump narrowly tipped brown; chin and throat paler chestnut; band across lower-throat brown to blackish-brown, some feathers sometimes tipped rufous-buff; centre of breast and belly creamy-white, sides and flanks and under tail-coverts pinkish-buff; wing- and tail-feathers with less gloss than in adults; outer pair of tail-feathers only 10 mm. or less longer than penultimate and tips much broader than in adult, tips of rest of tail-feathers more rounded and less pointed than in adult, white patches on inner webs considerably smaller than in adults. N.B.—In worn plumage crown and throat-band become browner and chin and throat often almost white.

First winter and summer.—No certain distinction from adult when tail-feathers have moulted but judging by those in moult throat-band usually not so bright metallic-blue, under-parts more often rufous, outer tail-feathers not so often so long and narrow, but all these distinctions are variable and uncertain as examina-

tion of moulting birds proves. This plumage is acquired by a gradual complete moult as in adult but of those examined earliest moulting wings and tail (in Africa) were in October.

Measurements and structure.—♂ wing 120-129 mm., tail : central pair 34-46, outermost pair 93-122, tarsus 10-13, bill from skull 10-12 (26 measured). ♀ wing 116-128, tail : central pair 40-48, outermost pair 76-107 usually broader than in male but sometimes as narrow (18 measured). Juvenile ♂ wing 117-126, tail : central pair 40-47, outermost pair 60-70 always broader than in adults, ♀ wing 113-117, tail : outermost pair 60-64. Primaries : 1st minute about half primary-coverts, 2nd longest, 3rd occasionally equal but usually 2-4 mm. shorter, 4th 10-13 shorter, 5th 18-22 shorter, 6th 25-31 shorter ; primaries narrow, outer webs not emarginated. Secondaries very short, shorter than 10th primary, tips rather deeply notched, except innermost which are slightly longer with rounded tips. Tail deeply forked, 12 feathers, tips sharply sloped off on inner webs and outermost pair greatly elongated beyond the sloping off. Bill broad and flat almost an equilateral triangle in shape, tip slightly curved. Gape wide. Nostrils partially covered by membrane. Some fine rictal and nasal bristles. Tarsi and feet very short, not feathered.

Soft parts.—Bill, legs and feet black ; iris dark brown ; base of bill in juvenile pale yellow.

CHARACTERS AND ALLIED FORMS.—*H. r. savignii* (Egypt, Nubia) has chestnut breast and belly and white portions of tail-feathers tinged chestnut ; *H. r. transitiva* (Palestine) is paler on underparts than last ; *H. r. gutturalis* (Baikal, north China, Japan) is smaller, has white belly and chestnut of chin extends through centre of blue throat-band ; *H. r. tytleri* (Kamtschatka, north-east Siberia) is like last but has rufous belly ; *H. r. erythrogastra* (N. America) has paler rufous belly.

FIELD-CHARACTERS.—In form and behaviour Swallows and Martins are unlike any other British birds, except perhaps Swifts (which see). Slender build, long wings and forked tails no less than their great powers of flight and habit of hawking for their insect prey, either over water or at varying heights in the open, are very characteristic. Swallow differs from Martins in its uniform blue-black upper-parts, elongated outer tail-feathers, and chestnut-red throat and fore-head. Flight rapid with many twists and turns. Less gregarious than Martins at nesting-time, but in late summer congregates in large flocks preparatory to roosting in reed- or osier-beds. Song, a musical twittering. Call-note, "clitt." Alarm-notes, "clittit" and a sharp, clear "feet-a-feet."

BREEDING-HABITS.—Widely distributed but generally nests inside sheds and outbuildings, though in some districts many pairs breed inside chimney stacks. Exceptionally also breeds in roofs of caves and rarely on branches of trees. *Nest.*—Built of mud, but

more saucer-shaped than that of Martin, open at top and resting on support of some kind in most cases. Exceptionally nests on outer walls, not unlike Martin but more open at top. Lining of grasses, feathers, etc. *Eggs*.—Usually 4-5, sometimes 3 or 6, and 8 on record, white, spotted finely or boldly with red-brown and ashy shell-marks. Average of 50 British eggs, 20.2×13.9 mm. *Breeding-season*.—From mid-May onward. *Incubation*.—Just over 15 days (Owen). Two, occasionally a third brood. *Fledging-period*.—Normally 21 days (Owen).

FOOD.—Insects taken on the wing, chiefly diptera (Chironomidae, *Tipula*, *Empis*, *Borborus*, *Calliphora*, etc.), but also coleoptera (*Curculio*, *Helophorus*, *Tachinus*, *Aphodius*, etc.), hymenoptera (winged ants), neuroptera (*Calopteryx*), and exceptionally lepidoptera.

DISTRIBUTION.—*British Isles*.—Summer-resident (occasionally staying throughout winter). Generally distributed, but breeds rarely in extreme west of Ireland, north-west of Scotland and Orkneys, and very rarely Shetlands and O. Hebrides (Barra, 1896, and probably on occasions in Uists and Lewis).

MIGRATIONS.—*British Isles*.—Early arrivals of summer-residents begin end of third week March (early dates Feb. 29, 1912, Cornwall, Mar. 2, 1912, Cardigan, Mar. 5, 1918, Lanes., Mar. 6 and 13, 1913, Seilly); main arrival variable, from April 1 to end second week, merging end April into arrival of passage-migrants and continuing to fourth week May. Passage-movements last to end first week June with stragglers in north to end of month, and take place throughout country, but coastal routes are well marked, especially east (Channel to northern isles) though greater number apparently cross North Sea without reaching latter. Western routes, west coast, England and Wales and east coast Ireland and through Hebrides are probably to Færoes and Iceland. Summer-residents begin to move south last week July and emigration from south coasts begins second week Aug., later departures become merged in those of passage-migrants that begin to arrive northern isles early Sept.; numbers in north comparatively small, but larger on east coast, Forth southward. Numbers probably pass inland and through country and by west coast England and Wales; no evidence Ireland. Passage and emigration continue to nearly end Oct. Majority of later Oct. records are from east and south-east coasts pointing to movement being almost entirely those of passage-migrants; others doubtless accounted for by lateness of some broods which are frequent in some seasons. Stragglers frequent in Nov. up to end third week. (Late dates Dec. 1, 1908, Norfolk, Dec. 20, 1911, Berks., Jan. 3, 1913, Dorset, Jan. 23, 1913, Kerry). Irish summer-residents apparently arrive and depart mainly by south-east coast. Birds ringed as nestlings in

British Isles have been reported from western France, north-west Spain, Cape Province, Orange Free State and East Griqualand, and another (ringed as a breeding adult) from Natal.

DISTRIBUTION.—*Abroad.*—Europe, north-west Africa and western parts of Asia. Wintering in tropical and south Africa, India and its islands. Casual Spitsbergen, Jan Mayen, Greenland and Novaya Zemlia. Occasional Færoes and Iceland. Replaced by allied forms in Syria (? Asia Minor), Egypt, north Asia to Japan, and North America, all being migrants, wintering far south.

HIRUNDO DAURICA.

208. *Hirundo daurica rufula* Temm.—THE RED-RUMPED SWALLOW.

HIRUNDO RUFULA Temminck, Man. d'Orn., 2, ed. III, p. 298 (1835—Egypt, Sicily, S. Africa, Japan. S. Africa ex Levaillant, whose locality is not trustworthy. Japan erroneous. Restricted typical locality: Egypt).

Hirundo rufula, W. E. Clarke, Ann. Scot. Nat. Hist., 1906, p. 205, 1908, p. 83; Saunders, Brit. B., I, p. 11.

DESCRIPTION.—*Adult male and female.* *Winter.*—A few feathers

on fore-head chestnut, rest of fore-head and crown dark metallic-blue, mantle and scapulars same but middle portion of feathers white showing here and there; broad band on nape extending to sides of neck and to eye and joining line over eye chestnut; lower back and rump chestnut; lower part of rump paler and upper tail-coverts rufous-buff, long upper tail-coverts dark metallic-blue; lores buff tipped blackish; ear-coverts rufous-buff; whole under-parts buff to rufous-buff, feathers with fine dark brown shaft-lines much more marked in some individuals than in others; short under tail-coverts buff, rest black glossed greenish-blue and with buff bases; under wing-coverts and axillaries as rest of under-parts; tail black-brown glossed greenish-blue; outer pair of feathers sometimes with grey mark on inner webs; wing-feathers same, inner webs very narrowly edged buffish, innermost secondaries



The Red-rumped Swallow
(*Hirundo d. rufula*).

more glossed and three innermost tipped white or pale buff; primary- and greater coverts glossed greenish-blue, inner feathers of latter tipped buff; median and lesser coverts more glossy and blue. This plumage is acquired by complete moult in July-Aug. *Summer*.—Apparently no moult and very little change by abrasion but pale tips wear off innermost secondaries.

Nestling.—(Not examined.)

Juvenile.—Like adult but crown, mantle and scapulars dark brown with slight bluish gloss on crown and more on mantle and scapulars but much less than in adult, most feathers very narrowly tipped buff; nuchal collar and rump paler than in adult, rufous-buff rather than chestnut; long upper tail-coverts brown-black with slight gloss and tipped buff; under-parts paler with no shaft-lines on belly, dark brown patch at sides of breast; long under tail-coverts brown-black; tail and wing-feathers and all wing-coverts browner and with very little gloss, secondaries narrowly tipped buff, inner secondaries and all wing-coverts more broadly tipped same; outer tail-feathers much shorter than in adult.

First winter.—Apparently like adults. The juvenile body-plumage is moulted in autumn often beginning in July and apparently also wings and tail but no specimen sufficiently advanced in moult has been available to make certain of this.

Measurements and structure.—♂ wing 117-126 mm., tail: central pair 40-45, outermost pair 88-111, tarsus 12.5-13.5, bill from skull 9-10 (14 measured). ♀ wing 115-123, tail: central pair 39-47, outermost pair 85-102 (usually not so narrow as in male and rather more often with grey mark on inner web but these characters are not constant). Juvenile ♂ wing 116-122, tail: central pair 40-43, outermost pair 73-80 (broader than in adults and grey mark usually present). Primaries: 1st minute, about half primary-coverts, 2nd longest, 3rd 1-4 mm. shorter, 4th 6-12 shorter, 5th 14-20 shorter, 6th 22-27 shorter; outer webs not emarginated. Rest of structure as in Swallow.

CHARACTERS AND ALLIED FORMS.—*H. d. daurica* (east Siberia, Mongolia, Kansu) has nuchal band broken centrally with metallic-blue; *H. d. nipalensis* (Himalayas, China, Japan) is similar to last but has heavily streaked under-parts; *H. d. striolata* (south China) has whiter under-parts with still broader streaks and nuchal band is almost obscured by metallic-blue; *H. d. erythropygia* (India) is shorter in wing and tail, has rump and shorter upper tail-coverts deeper chestnut and fine streaks on under-parts. Chestnut nuchal collar and rump distinguish *H. d. rufula* from all other British Swallows.

FIELD-CHARACTERS.—In general appearance resembles Common Swallow and has a similar long forked tail, but is at once distinguished by its chestnut rump, shading into white, and at closer quarters by rufous nape. Note in flight slightly different and flight more

deliberate than Swallow's. Seen from below light throat and absence of steel blue gorget form good distinctions. (F.C.R.J.)

BREEDING-HABITS.—Breeds on cliff-faces as well as on walls of buildings. *Nest.*—Built of mud, mixed with bits of grass, but differs from that of Swallow or Martin in having entrance through a projecting spout, so that nest is retort shaped, lined with feathers, bits of wool, etc. *Eggs.*—4-5. White. Average size of 81 eggs, 20×14.3 mm. *Breeding-season.*—From beginning of May onward in Mediterranean Region. Apparently double brooded.

FOOD.—Insects taken on the wing, but exact data lacking.

DISTRIBUTION.—*Great Britain.*—Two obtained and two seen. One shot (and picked up dead ten days later) and two others seen, Fair Isle (Shetlands), June 2, 1906 (*ut supra*). Adult female Jury Gap, Romney Marsh (Kent), May 16, 1909 (M. J. Nicoll, *Bull. B.O.C.*, xxiii, p. 93).

DISTRIBUTION.—*Abroad.*—Turkestan, Persia, Baluchistan, Afghanistan, Syria, Egypt (? only as migrant), Asia Minor, Cyprus, Greece, also Morocco, western Algeria, and Tunisia. Sometimes seen in Italy, perhaps breeding in Sicily and south Italy, has occurred once Heligoland, and south France. Replaced by allied races in east Siberia, Mongolia, and north China (once [two specimens] in June in Assam), in the mountains south of the Brahmaputra, India, south China, and the East Indian Archipelago (probably only in winter).

Genus DELICHON Moore.

DELICHON Moore, Proc. Zool. Soc. London, xxii "1854" p. 104 (1855—Monotype: *D. nipalensis* Moore).

Differs from all other genera of *Hirundinidæ* by thickly feathered tarsus and toes. Tail forked, but lateral rectrices never greatly attenuated and elongated. Rump white, back metallic, eggs always white. Europe, north-west Africa, Asia.

DELICHON URBICA

209. *Delichon urbica urbica* (L).—THE MARTIN.

HIRUNDO URBICA Linnaeus, Syst. Nat., ed. x, i, p. 192 (1758—Europe. Restricted typical locality: Sweden).

Chelidon urbica (Linnaeus), Yarrell, II, p. 349; Saunders, p. 165.

DESCRIPTION.—*Adult male and female.* *Winter.*—Fore-head, crown, mantle and scapulars dark metallic-blue, feathers of nape and mantle with their central portions white often showing on nape but usually concealed on mantle; feathers of back brown glossed blue

and tipped white ; rump and shorter upper tail-coverts brown to pale brown with pale buff to brownish-buff tips, longer upper tail-coverts with their distal portions dark metallic-blue ; lores black ; feathers under eye same but slightly glossed blue ; chin, throat and upper breast pale brownish-buff ; at sides of upper breast small patch of dark brown ; centre of lower breast and belly white ; sides and flanks pale brownish-buff ; under tail-coverts same with blackish shaft-lines and often with some of the feathers with blackish-brown marks ; under wing-coverts brown with whitish tips ; axillaries pale brown ; tail-feathers black-brown with a slight greenish gloss ; primaries and secondaries same with pale brown edges to inner webs, 3rd secondary from innermost with white tip ; primary-coverts black-brown ; greater coverts same but with a slight gloss ; median and lesser coverts with more blue gloss. This plumage is acquired by moult which commences in Europe in Aug. (exceptionally July) with body-feathers, sometimes also wing-coverts and some secondaries are moulted, but, usually wings and tail are not moulted until winter. Body-plumage is moulted again Jan.-April but material available is insufficient to decide if wings and tail are moulted completely in autumn as they are in spring.



The Martin (*Delichon u. urbica*).

Summer.—Like winter but feathers of rump usually white with dark shaft-streaks (when newly grown tips are pale buff) some examples (especially females) have varying number of feathers with brown bases, but even in such examples rump in summer is never so dark and with so much brown as in winter ; chin, throat and upper-breast pale buff when freshly moulted, becoming white by abrasion.

Nestling.—Down white and rather scanty. Distribution, inner supra-orbital, occipital, humeral, spinal and femoral. Mouth inside orange-yellow, no tongue-spots, externally flanges pale yellow (C. B. Ticehurst, *Brit. B.*, iv., p. 71).

Juvenile.—Whole crown dark glossy mouse-brown ; mantle and scapulars same but tips of feathers glossed dark metallic-blue, feathers of nape and mantle with their middle portions white often showing on nape ; rump and shorter upper tail-coverts white, feathers with dark brown shaft-lines and with varying amount of brown marks at their bases and centres, longer upper tail-coverts dark brown with small greyish tips ; chin, throat, upper-breast and flanks pale brownish-buff, lower part of throat often whitish, sides

of upper-breast darker brown than rest, forming sometimes almost an incomplete band, rest of under-parts white; under tail-coverts with dark brown shaft-lines and often with irregular brown marks; under wing-coverts and axillaries as adult but slightly paler; tail- and wing-feathers and coverts dark brown, innermost secondaries with white tips.

First winter.—New feathers like adult winter but many juvenile feathers are retained until spring. The juvenile body-feathers commence to moult Aug., but wing- and tail-feathers not before Nov. *Summer.*—Like adult and moult same and doubtful if wings and tail moult twice though wings commence to moult in Nov.

Measurements and structure.—♂ wing 106-113 mm., tail: central pair 35-45, outermost pair 58-63, tarsus 10.5-13, bill from skull 8.5-9 (12 measured). ♀ wing 104-112, tail: central pair 35-43, outermost pair 57-63. Primaries: 1st minute about half primary-coverts, 2nd longest, 3rd occasionally equal, rarely 1 mm. longer, usually 1-3 shorter than 2nd, 4th 7-10 shorter, 5th 13-20 shorter, 6th 20-27 shorter, outer webs not emarginated. Secondaries very short, shorter than 10th primary, tips rather deeply notched except innermost which are longer with rounded tips. Tail deeply forked, 12 feathers, tips sharply sloped off on inner webs. Tarsi and feet short and feathered. Bill broad and flat almost an equilateral triangle in shape, tip slightly curved. Gape wide. Nostrils partially covered by membrane. Some fine and short rectal and nasal bristles.

Soft parts.—Bill black; legs and feet pink-flesh tinged yellow and covered with white feathers; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*D. u. meridionalis* (north-west Africa) has slightly shorter wing, but secondaries are proportionately longer and birds from south-west Persia are similar; *D. u. whiteleyi* (Siberia, Manchuria) has longer upper tail-coverts white instead of blue; *D. u. cashmiriensis* (Himalayas) is smaller and has brownish under-parts; *D. u. nigrimentalis* (Fokien, China) is still smaller and has black at point of chin; *D. u. dasypus* (Japan) is much like last but larger. White rump and under-parts, blue mantle and forked tail with no long "streamers" and feathered tarsi and feet distinguish House-Martin from other British Swallows.

FIELD-CHARACTERS.—Tail less deeply forked than Swallow's, and entire under-parts pure white, but readiest distinction is white rump which contrasts strongly with blue-black back and wings. White-feathered legs conspicuous when bird is on ground or clinging to nest. Essentially sociable both during nesting-season and afterwards. Song, a contented twittering often warbled whilst clinging to, or actually inside, nest. Call-notes, a soft "preet-a-preet" and a coarse "screeet," often uttered on wing. Alarm-note, sharp, shrill "prt."

BREEDING-HABITS.—Usually nests on outer walls of houses under eaves; exceptionally also inside roofs of sheds. Also on face of sea-cliffs and in some districts also on inland cliffs. *Nest.*—Generally found in colonies, sometimes built on to one another, in shape like a section of a cup, with narrow opening at top, built of mud moistened with saliva and mixed with bents, etc., lined with feathers, bits of straw, etc. *Eggs.*—4-5, sometimes 3 or even 6, white, slightly glossy. Average of 54 British eggs, 19.4×13.2 mm. *Breeding-season.*—From latter part of May onward, many birds nesting in June. *Incubation.*—Shared by both sexes; period about 14 days. Double brooded, sometimes a third.

FOOD.—Insects taken on the wing, chiefly diptera, especially the smaller species (Chironomidae, etc.), but also coleoptera (*Tachyporus*, *Aphodius*, *Coccinella*, etc.), occasionally lepidoptera (*Pieris*, *Triphaena*, *Agrotis*, etc.) and neuroptera (Oldham).

DISTRIBUTION.—*British Isles.*—Summer-resident. Generally distributed, but more local, especially in Ireland, than Swallow. Scarce breeder Orkneys, only occasionally nests and not common migrant Shetlands, and rare vagrant (about a dozen times) to O. Hebrides.

MIGRATIONS.—*British Isles.*—Early arrivals of summer-residents begin first week April (early dates Mar. 23, 1913, Devon; Mar. 25, 1912, Sussex; Mar. 26, 1919, Somerset; Mar. 27, 1913, Essex, 1909, Devon; Mar. 28, 1910, Mar. 29, 1912, Mar. 30, 1907, Hants.; Mar. 30, 1910, Salop); main arrival begins mid-April (variable, second to fourth week) and lasts to end May, becoming merged in movements of passage-migrants that pass through country and by east coast route (Channel to northern isles) to end first week June, with stragglers in north to end of month. Probable passage-migration west coast also (England and Wales and Inner Hebrides) but evidence not clear. Summer-residents begin to move south mid-July, emigration south coast begins first week Aug. and lasts to third week Oct., stragglers frequent to mid-Nov. and occasional to first week Dec. (late date Jan. 10, 1912, Hampton Court). Later part becomes combined with passage-migration east coast (northern isles to Channel) that begins occasionally in mid-July, but main movement in Sept. and Oct.; very small numbers only in north, bulk appear to arrive south of Humber. Majority of Oct. records relate to this movement. No evidence of passage west coast. Irish summer-residents appear to arrive and depart mainly by south-east coast; no evidence of passage-migration.

DISTRIBUTION.—*Abroad.*—Europe, from lat. 70° north in Scandinavia to Mediterranean, east to Yenisei and Turkestan. Wintering in south-east Africa and Mossamedes, and in north-west India. Casual Iceland and Greenland, also Madeira. Replaced by short-

winged form in north-west Africa, apparently south-west Persia and Greece and possibly south Spain, by other forms in central and east Siberia, Mongolia, Manchuria and north China, Kashmir, south China and Japan.

Genus RIPARIA Forst.

RIPARIA Forster, Syn. Cat. Brit. B., p. 17 (1817—Monotype: *Riparia europæa* Forst. = *Riparia riparia*).

Feet unfeathered, tail not deeply forked, its emargination not above 10 mm. deep. Plumage rather softer than that of Swallows and Martins. Upper-parts quite uniform, no metallic colours. The members of the so-called "*Biblis*" are not structurally separable, though they do not nest in deep holes dug into banks, but build mud-nests, while their eggs are spotted instead of pure white. Europe, Asia, Africa and North America.

RIPARIA RIPARIA

210. *Riparia riparia riparia* (L.)—THE SAND-MARTIN.

HIRUNDO RIPARIA Linnæus, Syst. Nat., ed. x, i, p. 192 (1758—Europe. Restricted typical locality: Sweden).

Cotile riparia (Linnæus), Yarrell, II, p. 355; Saunders, p. 167.

DESCRIPTION. — *Adult male and female. Winter and summer.*—Whole upper-parts dark earth-brown, feathers of fore-head tipped grey, rump and upper tail-coverts slightly paler than rest of upper-parts and feathers when fresh with very narrow greyish tips; lores greyish-white, feathers tipped dark brown; ear-coverts dark brown; chin and throat white extending to sides of neck below ear-coverts (chin sometimes washed with buff and occasionally speckled with brown); band across breast and sides of breast brown, feathers of centre of breast-band fringed whitish; flanks and a few feathers down centre of breast partly brown and partly white; rest of



The Sand-Martin (*Riparia r. riparia*).

under-parts including under tail-coverts white; axillaries brown; under wing-coverts same tipped white; tail-feathers dark brown with a very faint greenish gloss, inner and outer webs very narrowly edged white; primaries blackish-brown with a very faint greenish gloss, inner webs very narrowly edged whitish; secondaries

same but outer webs also very narrowly edged grey-brown to whitish, innermost secondaries paler not so blackish; primary-coverts as primaries; rest of wing-coverts dark brown narrowly tipped paler brown. Moults appears to be exactly same as in Swallow, of gradual nature and apparently not a double moult and remiges and rectrices moulted in winter quarters (Dec.—April). *Summer*.—Abrasion has very little effect but pale edges of feathers of rump and wing-coverts become worn off.

Nestling.—Down pale grey, rather short but fairly plentiful. Distribution, inner supra-orbital, occipital, spinal and humeral. Mouth inside pale yellow, no spots, externally flanges pale yellow.

Juvenile.—Similar to adult but feathers of upper-parts fringed with rufous-buff to greyish-white, especially noticeable on rump and upper tail-coverts where fringes are wider; inner secondaries and all wing-coverts, except primary-coverts, similarly fringed; feathers of centre of breast-band tipped buff; chin and throat usually washed with buff and often speckled with brown.

First winter and summer.—Moult of a gradual nature as in Swallow but of specimens examined earliest moulting wings and tail was in Dec. After moult not distinguishable from adult.

Measurements and structure.—♂ wing 101-110 mm., tail: central pair 39-45, outermost pair 49-57, tarsus 9.5-11, bill from skull 8-9.5 (12 measured). ♀ wing 101-107. Primaries: 1st minute, from $\frac{1}{2}$ to $\frac{2}{3}$ primary-coverts, 2nd longest, 3rd occasionally equal, rarely 1 mm. longer, usually 1-3 shorter, 4th 7-10 shorter, 5th 14-18 shorter, 6th 20-26 shorter; outer webs not emarginated. Secondaries very short, shorter than 10th primary, tips rather deeply notched except innermost which are longer with rounded tips. Tail forked, 12 feathers, tips rounded. Tarsi and feet short and bare except for some tufts of short white feathers at back of tarsus. Bill broad and flat almost an equilateral triangle in shape, tip slightly curved. Gape wide. Nostrils partially covered by membrane. Some fine and short nasal and rictal bristles.

Soft parts.—Bill, legs and feet black-brown; iris dark brown.

CHARACTERS AND ALLIED FORMS.—*R. r. littoralis* (Egypt, Nubia) is smaller; *R. r. diluta* (north Siberia to north-west India) is paler on upper-parts; *R. r. ijimæ* (east Siberia, Japan) is darker on upper-parts; other (doubtful) forms have been named from western Asia. Earth-brown upper-parts and breast-band distinguish Sand-Martin from other British Swallows.

FIELD-CHARACTERS.—Smaller than Swallow or House-Martin, has only slightly forked tail. Dorsally, uniform mouse-brown, below, white with brown band on chest. Gregarious at nesting-stations in sandpits and earthy cliffs, and, like Swallow, roosts in large flocks in reed- and osier-beds after nesting-season. Song, a chattering twitter lacking sweetness of Swallow's and Martin's. Call-note, a loud, hard "sweer." Alarm-note, a harsh "ret."

BREEDING-HABITS.—Nests in sand and gravel pits, banks of rivers, railway cuttings, etc., making a burrow 2-3 feet long. Occasionally breeds in drain pipes projecting from wall, or hole in wall, sawdust heaps, etc. *Nest.*—Carelessly built of straws and freely lined feathers. *Eggs.*—Usually 4-5, sometimes 3 to 6 or 7. White, without gloss. Average of 50 eggs, 17.6×12.4 mm. *Breeding-season.*—From about May 10 onward, but later in north. Double brooded.

FOOD.—Insects taken on the wing; chiefly smaller diptera but undoubtedly also neuroptera.

DISTRIBUTION.—*British Isles.*—Summer-resident. Widely distributed, but local. In Ireland more frequent than Martin. Scarce in extreme north of Scotland and O. Hebrides, rare breeder Orkneys, and somewhat scarce migrant, once recorded nesting, Shetlands.

MIGRATIONS.—*British Isles.*—Early arrivals of summer-residents begin middle of third week Mar. (early dates Mar. 13, Cardigan; Mar. 15, 1913, Cheshire); main arrival variable, last three days March to second week April, lasting to beginning June; no evidence of passage-migration and but few birds reach northern isles. Summer-residents begin to move south mid-July in Scotland and early Aug. (occasionally end July) England and Wales, emigration from south coast end (occasionally first week) Aug. to end third week Sept. Some evidence passage-migration east coast, south of Humber, end Aug. and Sept. none elsewhere. Stragglers frequent to mid-Oct. (late dates, Oct. 19, 1909, S.E. Suffolk; Oct. 26, 1908, Monach Isles (O.H.); Oct. 30, 1911, Nov. 11, 1912, Sussex; Dec. 1914, Berks.). Irish summer-residents apparently arrive and depart mainly by south-east coast; no evidence of passage-migration.

DISTRIBUTION.—*Abroad.*—Europe generally from 70° north, south to Tunisia and Algeria, east to Siberia, Syria, Palestine, but limits not well known, also North America. Wintering in east and south Africa, India, also in South America. Replaced by other forms (limits in Asia imperfectly known) in Siberia, north-west India, Turkestan, and Nile Valley.

[NOTE.—The AMERICAN PURPLE MARTIN, *Progne subis subis* (L.), said to have been shot near Kingstown, Ireland, in 1840 (Yarrell, II, p. 361; Saunders, p. 166), and the AMERICAN TREE-SWALLOW, *Tachycineta bicolor* (Vieill.), said to have been killed at Derby in 1850, cannot be admitted.]

INDEX OF ENGLISH NAMES.

Accentor, Alpine, 485.
 Blackbird, 418.
 Blackcap, 366.
 Bluethroat, Lapland, 474.
 —, Norwegian, 473.
 —, White-spotted, 477.
 Brambling, 95.
 Bulbul, South African, 281.
 Bullfinch, British, 75.
 —, Northern, 74.
 Bunting, Black-headed, 115.
 —, Cirl, 120.
 —, Corn-, 108.
 —, Eastern Large-billed Reed-, 137.
 —, East Siberian Meadow-, 126.
 —, Lapland, 138.
 —, Little, 130.
 —, Meadow-, 124.
 —, Ortolan, 122.
 —, Pine-, 113.
 —, Reed-, 133.
 —, Rock-, 124.
 —, Rustic, 128.
 —, Snow-, 141.
 —, Western Large-billed Reed-, 136.
 —, Yellow, 110.
 —, Yellow-breasted, 117.
 Chaffinch, 92.
 Chiffchaff, 298.
 —, Scandinavian, 301.
 —, Siberian, 302.
 Chough, 31.
 —, Alpine, 33.
 Creeper, Tree-, British, 214.
 —, —, Northern, 217.
 —, Wall, 218.
 Crossbill, American White-winged, 91.
 —, Common, 84.
 —, Parrot-, 88.
 —, Scottish, 87.
 —, Two-barred, 89.
 Crow, Carrion-, 13.
 —, Hooded, 11.
 Dipper, Black-bellied, 497.
 —, British, 498.
 —, Irish, 501.
 Fieldfare, 392.
 Finch, Citril, 66.
 Flycatcher, Brown, 287.
 —, Collared, 292.
 —, Pied, 288.
 —, Red-breasted, 295.
 —, Spotted, 284.
 Goldfinch, British, 51.
 —, Continental, 51.
 —, North American, 56

Greenfinch, 47.
 Grosbeak, Pine-, 81.
 —, Scarlet, 78.
 Hawfinch, 44.
 Jackdaw, 19.
 Jay, British, 28.
 —, Continental, 27.
 —, Irish, 30.
 Lark, Black, 149.
 —, Calandra, 151.
 —, Crested, 157.
 —, Eastern Short-toed, 156.
 —, — Sky-, 166.
 —, Shore-, 167.
 —, Short-toed, 154.
 —, Sky-, 163.
 —, White-winged, 147.
 —, Wood-, 160.
 Linnet, 68.
 Magpie, 21.
 Martin, 509.
 —, Sand-, 513.
 Mynah, Indian, 39.
 Nightingale, 468.
 —, Thrush-, 471.
 Nutcracker, Slender-Billed, 26.
 —, Thick-billed, 24.
 Nuthatch, British, 221.
 Oriole, Golden, 40.
 Ouzel, Ring-, 413.
 —, —, Alpine, 416.
 Pipit, American Water-, 186.
 —, Meadow-, 179.
 —, Red-throated, 182.
 —, Richard's, 172.
 —, Rock-, 188.
 —, Scandinavian Rock-, 190.
 —, Tawny, 174.
 —, Tree-, 176.
 —, Water-, 184.
 Raven, 9.
 Redpoll, Coes's, 66.
 —, Greenland, 61.
 —, Holböll's, 60.
 —, Hornemann's, 64.
 —, Lesser, 62.
 —, Mealy, 59.
 Redstart, 459.
 —, Black, 463.
 Redwing, 404.
 Robin, American, 413.
 —, British, 481.
 —, Continental, 479.
 Rook, 15.
 Ruby-throat, Siberian, 473.
 Serin, 71.
 —, Canary, 73.
 Shrike, Corsican Woodchat, 277.

Shrike, Great Grey, 263.
 —, Lesser Grey, 260.
 —, Masked, 272.
 —, Red-backed, 274.
 —, South European Grey, 266.
 —, Woodchat, 268.
 Siskin, 54.
 Snowbird, American, 145.
 Snow-Finch, 98.
 Sparrow, American White-throated, 145.
 —, British Hedge-, 489.
 —, Continental Hedge-, 488.
 —, House-, 101.
 —, Tree-, 104.
 Starling, 34.
 —, Red-winged, 39.
 —, Rose-coloured, 37.
 —, Shetland, *vi.
 Stonechat, British, 454.
 —, Indian, 457.
 Swallow, 503.
 —, Red-rumped, 507.
 Thrush, Black-throated, 410.
 —, British Song-, 400.
 —, Continental Song-, 399.
 —, Dusky, 407.
 —, Hebridean Song-, 403.
 —, Mistle-, 395.
 —, Rock-, 421.
 —, Siberian, 392.
 —, White's, 390.
 Titmouse, Bearded, 256.
 —, British Blue, 231.
 —, — Coal-, 235.
 —, — Great, 227.
 —, — Long-tailed, 248.
 —, — Marsh-, 241.
 —, — Willow-, 243.
 —, Central European Crested, 240.
 —, Continental Blue, 230.
 —, — Coal-, 233.
 —, — Great, 225.
 —, Irish Coal-, 237.
 —, Northern Crested, 239.
 —, — Long-tailed, 246.
 —, — Willow-, 244.
 —, Scottish Crested, 238.
 Tree-Creeper, British, 214.
 —, Northern, 217.
 Twite, 56.
 Wagtail, Ashy-headed, 197.
 —, Black-headed, 198.
 —, Blue-headed, 192.
 —, Grey, 202.
 —, Grey-headed, 196.
 —, Masked, 212.
 —, Pied, 206.
 —, Sykes's, 196.

Wagtail, White, 209.
 —, Yellow, 199.
 Wall-Creeper, 218.
 Warbler, American Yellow, 213.
 —, Aquatic, 349.
 —, Barred, 359.
 —, Blyth's Reed-, 344.
 —, Brown-backed, 388.
 —, Cetti's, 323.
 —, Dartford, 382.
 —, Dusky, 319.
 —, Eastern Great Reed-, 337.
 —, Eversmann's, 312.
 —, Garden-, 364.
 —, Grasshopper-, 330.
 —, Great Reed-, 335.
 —, Greenish, 307.
 —, Icterine, 352.
 —, Lanceolated, 333.
 —, Marsh-, 343.
 —, Melodious, 354.
 —, Moustached, 324.
 —, Northern Willow-, 306.
 —, Olivaceous, 356.
 —, Orphean, 361.
 —, Pallas's, 316.
 —, — Grasshopper-, 328.
 —, Radde's Bush-, 320.
 —, Reed-, 339.
 —, Rufous, 385.
 —, Rüppell's, 375.
 —, Sardinian, 377.
 —, Savi's, 326.
 —, Sedge-, 346.
 —, Subalpine, 380.
 —, Willow-, 304.
 —, Wood-, 309.
 —, Yellow-browed, 315.
 Waxwing, 278.
 Wheatear, 426.
 —, Black, 446.
 —, Eastern Black-eared, 438.
 —, — Desert-, 434.
 —, Greenland, 429.
 —, Isabelline, 443.
 —, North African Black, 448.
 —, Pied, 441.
 —, Western Black-eared, 435.
 —, — Desert-, 431.
 Whinchat, 449.
 Whitethroat, 369.
 Wren, 492.
 —, American Ruby-crowned, 256.
 —, British Gold-crested, 252.
 —, Continental Gold-crested, 251.
 —, Fire-crested, 254.
 —, St. Kilda, 495.
 —, Shetland, 496.

GENERAL INDEX.

Scientific names as adopted in this work are printed in italic type and those quoted as synonyms in ordinary type. English names are in small capitals.

- abietina*, *Phylloscopus collybita*, 301.
 —, *Sylvia*, 301.
abietinus, *Phylloscopus collybita*, 301.
Acanthis carduelis britannicus, 51.
 — *linaria britannica*, 62.
 ACCENTOR, ALPINE, 485.
 Accentor, 484.
 — *alpinus*, 485.
 — *collaris*, 485.
 — *modularis*, 489.
 — *occidentalis*, 489.
Accentoridæ, 484.
Acredula caudata, 246, 248.
Acrocephalus, 334.
 — *aquaticus*, 349.
 — *arundinaceus*, 335, 339.
 — *arundinaceus*, 335.
 — *orientalis*, 337.
 — *dumetorum*, 344.
 — *luscinioides*, 326.
 — *nævus*, 330.
 — *palustris*, 342.
 — *phragmitis*, 346.
 — *schænobænus*, 346.
 — *scirpaceus*, 339.
 — *scirpaceus*, 339.
 — *streperus*, 339.
 — *turdoides*, 335.
Aëdon galactodes, 385.
 — *familiaris*, 388.
 — *Troglodytes*, 492.
Ægiothus rostratus, 61.
Ægithalos, 246.
 — *caudatus*, 246.
 — *caudatus*, 246.
 — *roseus*, 248.
æstiva, *Dendroica æstiva*, 213.
Agelaius phœniceus, 39.
Agrobates, 385.
 — *galactotes*, 385.
 — *galactotes*, 385.
 — *syriacus*, 388.
Alauda, 163.
 — *arborea*, 160.
 — *arvensis*, 163.
Alauda arvensis arvensis, 163.
 — *cinerascens*, 166.
 — *cinerea*, 166.
 — *scotica*, 163.
 — *brachydactyla*, 154.
 — *Calandra*, 151.
 — *campestris*, 174.
 — *cinerea*, 166.
 — *cristata*, 157.
 — *flava*, 167.
 — *longipennis*, 156.
 — *obscura*, 188.
 — *petrosa*, 188.
 — *pratensis*, 179.
 — *Rubescens*, 186.
 — *sibirica*, 147.
 — *Spinoletta*, 184.
 — *tatarica*, 149.
 — *trivialis*, 176.
 — *yeltoniensis*, 149.
Alaudidæ, 145.
alba, *Motacilla*, 206.
 —, *alba*, 209.
albicollis, *Muscicapa*, 292.
 —, *Zonotrichia*, 145.
albifrons, *Enanthe deserti*, 434.
 —, *Saxicola*, 434.
alpestris, *Eremophila*, 167.
 —, *Merula*, 416.
 —, *Otocorys*, 167.
 —, *Turdus torquatus*, 416.
alpinus, *Accentor*, 485.
Alseonax latirostris, 287.
amphileuca, *Saxicola*, 439.
anglica, *Loxia curvirostra*, 84.
anglorum, *Regulus regulus*, 252.
Anthus, 171.
 — *arboreus*, 176.
 — *campestris*, 174.
 — *cervinus*, 182.
 — *littoralis*, 190.
 — *ludovicianus*, 186.
 — *obscurus*, 188.
 — *pennsylvanicus*, 186.
 — *pratensis*, 179.
 — *richardi*, 172.
 — *richardi*, 172.

- Anthus rupestris*, 190.
Anthus spinoletta, 184.
 ——— *littoralis*, 190.
 ——— *obscurus*, 188.
 ——— *petrosus*, 188.
 ——— *rubescens*, 186.
 ——— *spinoletta*, 184.
 ——— *spipoletta*, 184.
 ——— *trivialis*, 176.
 ——— *trivialis*, 176.
aquatica, *Motacilla*, 349.
aquaticus, *Acrocephalus*, 349.
 ———, *Cinclus*, 501.
arborea, *Alauda*, 160.
arborea, *Lullula*, 160.
 ———, ——— *arborea*, 160.
arboreus, *Anthus*, 176.
arundinaceus, *Acrocephalus*, 335.
 ———, ——— *arundinaceus*, 335.
 ———, *Turdus*, 335.
arvensis, *Alauda*, 163.
 ———, ——— *arvensis*, 163.
ater, *Parus*, 233, 235.
 ———, ——— *ater*, 233.
Atricapilla, *Motacilla*, 366.
atricapilla, *Muscicapa*, 288.
atricapilla, *Sylvia*, 366.
 ———, ——— *atricapilla*, 366.
atricapillus, *Parus*, 243.
atrigrularis, *Turdus*, 410.
atrogularis, *Saxicola deserti*, 434.
 ———, *Turdus*, 410.
atrogularis, *Turdus*, *ruficollis*, 410.
aureola, *Emberiza*, 117.
aureus, *Turdus*, 390.
aureus, *Turdus dauma*, 390.
auriculatus, *Lanius*, 268.
aurita, *Saxicola*, 439.

badius, *Lanius*, 271.
badivus, *Lanius senator*, 271.
baltimore, *Icterus*, 39.
Beema, *Budytes*, 196.
beema, *Motacilla*, 196.
beema, *Motacilla flava*, 196.
biarmicus, *Panurus*, 256.
 ———, ——— *biarmicus*, 256.
 ———, *Parus*, 256.
bicolor, *Tachycineta*, 515.
bifasciata, *Crucirostra*, 89.
 ———, *Loxia*, 89.
bifasciata, *Loxia leucoptera*, 89.
BLACKBIRD, 418.
BLACKCAP, 366.
BLUETHROAT, *LAPLAND*, 474.
 ———, *NORWEGIAN*, 473.
 ———, *WHITE-SPOTTED*, 477.
boarula, *Motacilla*, 202.
Bombycilla, 278.
 ——— *cedrorum*, 278.

Bombycilla garrulus, 278.
Bombycillidæ, 278.
borealis, *Motacilla*, 196.
 ———, ——— *flava*, 196.
 ——— *Parus*, 245.
borealis, *Parus atricapillus*, 245.
 ———, *Phyllopneuste*, 312.
 ———, *Phylloscopus*, 312.
 ———, ——— *borealis*, 312.
Borin, *Motacilla*, 364.
borin, *Sylvia*, 364.
brachydaetyla, *Alauda*, 154.
brachydaetyla, *Calandrella*, 154.
 ———, ——— *brachydaetyla*, 154.
BRAMBLING, 95.
britannica, *Acanthis linaria*, 62.
britannica, *Carduelis carduelis*, 51.
 ———, *Sitta europæa*, 221.
britannicus, *Acanthis carduelis*, 51.
britannicus, *Cinclus cinclus*, 498.
 ———, *Parus*, 235.
 ———, ——— *ater*, 235.
britannica, *Certhia*, 214.
britannica, *Certhia familiaris*, 214.
Budytes Beema, 196.
 ——— *neglectus*, 199.
 ——— *Rayi*, 199.
Bulbul, *South African*, 281.
BULLFINCH, *BRITISH*, 75.
 ———, *NORTHERN*, 74.
BUNTING, *BLACK-HEADED*, 115.
 ———, *CIRL*, 120.
 ———, *CORN-*, 108.
 ———, *EASTERN LARGE-BILLED REED-*, 137.
 ———, *EAST SIBERIAN MEADOW-*, 126.
 ———, *LAPLAND*, 138.
 ———, *LITTLE*, 130.
 ———, *MEADOW-*, 124.
 ———, *ORTOLAN*, 122.
 ———, *PINE-*, 113.
 ———, *REED-*, 133.
 ———, *ROCK-*, 124.
 ———, *RUSTIC*, 128.
 ———, *SNOW-*, 141.
 ———, *WESTERN LARGE-BILLED REED-*, 136.
 ———, *YELLOW*, 110.
 ———, *YELLOW-BREASTED*, 117.

Cabaret, *Fringilla*, 62.
cabaret, *Carduelis linaria*, 662.
cæruleus, *Parus*, 230.
 ———, ——— *cæruleus*, 230.
cæsia, *Sitta*, 221.
Calandra, *Alauda*, 151.
calandra, *Emberiza*, 108.
 ———, ——— *calandra*, 108

- calandra*, *Melanocorypha*, 151.
 —, — *calandra*, 151.
Calandrella, 153.
 — *brachydactyla*, 154.
 — *brachydactyla*, 154.
 — *longipennis*, 156.
Calcarinus, 137.
 — *lapponicus*, 138.
 — *lapponicus*, 138.
calendula, *Regulus calendula*, 256.
callope, *Luscinia*, 473.
campestris, *Alauda*, 174.
campestris, *Anthus*, 174.
canarius, *Serinus*, 71.
cannabina, *Carduelis*, 68.
 —, — *cannabina*, 68.
 —, *Fringilla*, 68.
 —, *Linota*, 68.
cantillans, *Motacilla*, 380.
cantillans, *Sylvia*, 380.
 —, — *cantillans*, 380.
capensis, *Pycnonotus*, 281.
Carduelis, 50.
 — *cannabina*, 68.
 — *cannabina*, 68.
 — *carduelis*, 51.
 — *britannica*, 51.
 — *carduelis*, 51.
 — *citrinella*, 66.
 — *citrinella*, 66.
 — *elegans*, 51.
 — *flavirostris*, 56.
 — *flavirostris*, 56.
 —, *Fringilla*, 51.
 — *hornemanni*, 64.
 — *exilipes*, 66.
 — *hornemanni*, 64.
 — *linaria*, 59.
 — *cabaret*, 62.
 — *holboellii*, 60.
 — *linaria*, 59.
 — *rostrata*, 61.
 — *spinus*, 54.
 — *tristis*, 56.
carduelis, *Carduelis*, 51.
 —, — *britannica*, 51.
 —, — *carduelis*, 51.
carolinus, *Scolecophagus*, 39.
Carpodacus, 76.
 — *erythrinus*, 78.
 — *erythrinus*, 78.
Caryocatactes, *Corvus*, 24.
caryocatactes, *Nucifraga*, 24, 26.
 —, — *caryocatactes*, 24.
castaneiceps, *Emberiza*, 126.
castaneiceps, *Emberiza cioides*, 126.
caudata, *Acredula*, 246, 248.
caudatus, *Egithalos*, 246.
 —, — *caudatus*, 246.
 —, *Parus*, 246.
cedrorum, *Bombycilla*, 278.
Certhia, 214.
 — *britannica*, 214.
 — *familiaris*, 214.
 — *britannica*, 214.
 — *familiaris*, 217.
 — *muraria*, 218.
Certhiidae, 214.
Certhiola, *Motacilla*, 328.
certhiola, *Locustella*, 328.
Cervina, *Motacilla*, 182.
cervinus, *Anthus*, 182.
cetti, *Cettia*, 322.
 —, — *cetti*, 322.
 —, *Sylvia*, 322.
Cettia, 321.
 — *cetti*, 322.
 — *cetti*, 322.
 — *cetti*, 322.
 CHAFFINCH, 92.
Chelidon urbica, 509.
 CHIFFCHAFF, 298.
 —, SCANDINAVIAN, 301.
 —, SIBERIAN, 302.
Chloris, 47.
 — *chloris*, 47.
 — *chloris*, 47.
 —, *Loxia*, 47.
chloris, *Chloris*, 47.
 —, — *chloris*, 47.
 —, *Coccothraustes*, 47.
 CHOUGH, 31.
 —, Alpine, 33.
Chrysomitris citrinella, 66.
cia, *Emberiza*, 124.
 —, — *cia*, 124.
Cinclus, 484.
 — *aquaticus*, 498, 501.
Cinclus cinclus, 497.
 — *britannicus*, 498.
 — *cinclus*, 497.
 — *hibernicus*, 501.
 — *hydrophilus*, 497.
 — *melanogaster*, 497.
 —, *Sturnus*, 497.
cinclus, *Cinclus cinclus*, 497.
cinerascens, *Alauda*, 166.
cinerascens, *Alauda arvensis*, 166.
cinerea, *Alauda*, 166.
 —, — *arvensis*, 166.
cinerea, *Motacilla*, 202.
 —, — *cinerea*, 202.
 —, *Sylvia*, 369.
cinereocapilla, *Motacilla*, 197.
cinereocapilla, *Motacilla flava*, 197.
cioides, *Emberiza*, 126.
cirlus, *Emberiza*, 120.
Citrinella, *Fringilla*, 66.
citrinella, *Carduelis*, 66.
 —, — *citrinella*, 66.
 —, *Chrysomitris*, 66.

citrinella, *Emberiza*, 110.
 —, — *citrinella*, 110.
clarkei, *Turdus philomelos*, 400.
cælebs, *Fringilla*, 92.
 —, — *cælebs*, 92.
Coccothraustes, 44.
 — *chloris*, 47.
 — *coccothraustes*, 44.
 — — *coccothraustes*, 44.
 —, *Loxia*, 44.
 — *vulgaris*, 44.
coccothraustes, *Coccothraustes*, 44.
 —, — *coccothraustes*, 44.
Colæus, 18.
 — *monedula*, 19.
 — — *spermologus*, 19.
collaris, *Accentor*, 485.
 —, *Muscicapa*, 292.
collaris, *Prunella*, 485.
 —, — *collaris*, 485.
 —, *Sturnus*, 485.
collurio, *Lanius*, 274.
 —, — *collurio*, 274.
collybita, *Phylloscopus*, 298.
 —, — *collybita*, 298.
 —, *Sylvia*, 298.
communis, *Sylvia*, 369.
 —, — *communis*, 369.
Coracias Galbula, 39.
 — *Oriolus*, 40.
corax, *Corvus*, 9.
 —, — *corax*, 9.
cornix, *Corvus*, 11.
 —, — *cornix*, 11.
corone, *Corvus*, 13.
 —, — *corone*, 13.
Corvidæ, 7.
Corvus, 8.
 — *caryocatactes*, 24.
 — *corax*, 9.
 — — *corax*, 9.
 — *cornix*, 11.
 — — *cornix*, 11.
 — *corone*, 13.
 — — *corone*, 13.
 — *frugilegus*, 15.
 — — *frugilegus*, 15.
 — *glandarius*, 27.
 — *monedula*, 19.
 — *pica*, 21.
 — *spermologus*, 19.
Cotile riparia, 513.
cristata, *Alauda*, 175.
cristata, *Galerida*, 157.
 —, — *cristata*, 157.
cristatus, *Parus*, 238, 239.
 —, — *cristatus*, 239.
 —, *Regulus*, 251, 252.
 CROSSBILL, AMERICAN WHITE-
 WINGED, 91.

CROSSBILL, COMMON, 84.
 —, PARROT, 88.
 —, SCOTTISH, 87.
 —, TWO-BARRED, 89.
 CROW, CARRION-, 13.
 —, HOODED, 11.
Crucirostra bifasciata, 89.
Curruca galactodes, 388.
 —, *Motacilla*, 372.
curruca, *Sylvia*, 372.
 —, — *curruca*, 372.
curvirostra, *Loxia*, 84, 87.
 —, — *curvirostra*, 84.
Cyanecula leucocyana, 477.
 — *suecica*, 473.
 — *wolfi*, 477.
cyanecula, *Luscinia svecica*, 477.
 —, *Sylvia*, 477.
cyanus, *Monticola*, 421.

dartfordiensis, *Sylvia*, 382.
dartfordiensis, *Sylvia undata*, 382.
Daulias lusciniæ, 468.
dauma, *Turdus*, 390.
daurica, *Hirundo*, 507.
Delichon, 507.
 — *nipalensis*, 509.
 — *urbica*, 509.
 — — *urbica*, 509.
Dendroica æstiva æstiva, 213.
deserti, *Enanthe*, 431.
 —, — *deserti*, 431.
 —, ? *Saxicola*, 431.
 DIPPER, BLACK-BELLIED, 497.
 —, BRITISH, 498.
 —, IRISH, 501.
domestica, *Fringilla*, 101.
domesticus, *Passer*, 101.
 —, — *domesticus*, 101.
dresseri, *Parus palustris*, 241.
dubius, *Turdus*, 407.
dumetorum, *Acrocephalus*, 344.

elæica, *Hypolais pallida*, 356.
 —, *Salicaria*, 356.
elegans, *Carduelis*, 51.
Emberiza, 106.
 — *aureola*, 117.
 — *calandra*, 108.
 — — *calandra*, 108.
 — *castaneiceps*, 126.
 — *Cia*, 124.
 — *cia cia*, 124.
 — *cioides*, 126.
 — — *castaneiceps*, 126.
 — *cirlus*, 120.
 — *citrinella*, 110.
 — — *citrinella*, 110.
 — *hortulana*, 122.

Emberiza leucocephala, 113.
 — *leucocephalos*, 113.
 — *melanocephala*, 115.
 — *miliaria*, 108.
 — *nivalis*, 141.
 — *palustris*, 136.
 — — *palustris*, 136.
 — — *techusii*, 137.
 — *pusilla*, 130.
 — *pyrrhuloides palustris*, 136.
 — *rustica*, 128.
 — *schœniclus*, 133.
 — — *schœniclus*, 133.
 — — *tschusii*, 137.
Enucleator, *Loxia*, 81.
enucleator, *Pinicola*, 81.
 — — *enucleator*, 81.
 — — *Pyrrhula*, 81.
Eremophila, 167.
 — *alpestris*, 167.
 — — *flava*, 167.
Erithacus, 479.
 — *gaetkei*, 473.
 — *rubecula*, 479, 481.
 — — *melophilus*, 481.
 — — *rubecula*, 479.
Euspiza melanocephala, 115.
erythrina, *Loxia*, 78.
 — — *Pyrrhula*, 78.
erythrinus, *Carpodacus*, 78.
 — — *erythrinus*, 78.
eunomus, *Turdus*, 407.
europæa, *Pyrrhula*, 75.
 — — *Riparia*, 513.
europæa, *Sitta*, 221.
eversmanni, *Phyllopneuste*, 306.
eversmanni, *Phylloscopus trochilus*, 306.
excubitor, *Lanius*, 263.
 — — *excubitor*, 263.
exilipes, *Ægiothus*, 66.
exilipes, *Carduelis hornemanni*, 66.

familiaris, *Aëdon*, 388.
familiaris, *Certhia*, 214, 217.
 — — *familiaris*, 217.
Feldegg, *Motacilla*, 198.
feldegg, *Motacilla flava*, 198.
feldeggi, *Motacilla*, 198.
ferrugineus, *Scolecophagus*, 39.
FIELDFARE, 392.
FINCH, *CITRIL*, 66.
flava, *Alauda*, 167.
flava, *Eremophila alpestris*, 167.
 — — *Motacilla*, 192.
 — — *flava*, 192.
flavirostris, *Carduelis*, 56.
 — — *flavirostris*, 56.
 — — *Fringilla*, 56.
FLYCATCHER, *BROWN*, 287.

FLYCATCHER, *COLLARED*, 292.
 — — *PIED*, 288.
 — — *RED-BREASTED*, 295.
 — — *SPOTTED*, 284.
Fringilla, 91.
 — *Cabaret*, 62.
 — *Caelebs gengleri*, 92.
 — *cannabina*, 68.
 — *carduelis*, 50, 51.
 — *Citrinella*, 66.
 — *cœlebs*, 92.
 — — *cœlebs*, 92.
 — *domestica*, 101.
 — *flavirostris*, 56.
 — *lapponica*, 138.
 — *Linaria*, 59.
 — *montana*, 104.
 — *montifringilla*, 95.
 — *nivalis*, 98.
 — *Schœniclus*, 133.
 — *Serinus*, 71.
 — *Spinus*, 54.
Fringillidæ, 42.
frugilegus, *Corvus*, 15.
 — — *frugilegus*, 15.
fuscata, *Phyllopneuste*, 318.
fuscatus, *Phylloscopus*, 318.
 — — *Turdus*, 407.

gaetkei, *Erithacus*, 473.
gaetkei, *Luscinia svecica*, 473.
galactodes, *Aëdon*, 385.
 — — *Curruca*, 388.
galactotes, *Agrobates*, 385.
 — — *galactotes*, 385.
 — — *Sylvia*, 385.
Galbula, *Coracias*, 39.
galbula, *Icterus*, 39.
 — — *Oriolus*, 40.
Galerida, 156.
 — — *cristata*, 157.
 — — *cristata*, 157.
Garrulus, 27.
 — — *glandarius*, 27, 28.
 — — *glandarius*, 27.
 — — *hibernicus*, 30.
 — — *rufitergum*, 28.
 — — *Lanius*, 278.
garrulus, *Ampelis*, 278.
garrulus, *Bombycilla*, 278.
gengleri, *Fringilla cœlebs*, 92.
gibraltariensis, *Motacilla*, 463.
gibraltariensis, *Phœnicurus ochrurus*, 463.
glandarius, *Corvus*, 27.
glandarius, *Garrulus*, 27, 28.
 — — *glandarius*, 27.
GOLDFINCH, *BRITISH*, 51.
 — — *CONTINENTAL*, 51.
 — — *North American*, 56.

Gracula religiosa, 39.
graculus, *Pyrrhocorax*, 31, 33.
 GREENFINCH, 47.
grisea, *Motacilla*, 202.
grisola, *Muscicapa*, 284.
 GROSBEAK, PINE-, 81.
 —, SCARLET, 78.
 HAWFINCH, 44.
hebridensis, *Turdus musicus*, 403.
hebridensis, *Turdus philomelus*, 403.
Herbivocula, 319.
 — *schwarzi*, 320.
hibernans, *Pratincola torquata*, 454.
hibernans, *Saxicola torquata*, 454.
hibernicus, *Cinclus cinclus*, 501.
 — *Garrulus glandarius*, 30.
 —, *Parus*, 237.
 —, — *ater*, 237.
hirtensis, *Troglodytes*, 495.
hirtensis, *Troglodytes troglodytes*, 495.
Hirundinidae, 502.
Hirundo, 502.
 — *daurica*, 507.
 — — *rufula*, 507.
 — *riparia*, 513.
 — *rufula*, 507.
 — *rustica*, 502, 503.
 — — *rustica*, 503.
 — *urbica*, 509.
hispanica, *Motacilla*, 435.
hispanica, *Enanthe*, 435.
 —, — *hispanica*, 435.
Holboellii, *Linaria*, 60.
holboellii, *Carduelis linaria*, 60.
 —, *Linaria*, 60.
homochroa, *Enanthe deserti*, 431.
 —, *Saxicola*, 431.
hornemanni, *Carduelis*, 64.
 —, — *hornemanni*, 64.
 —, *Linota*, 64.
hortensis, *Motacilla*, 361.
hortensis, *Sylvia*, 361.
 — — *hortensis*, 361.
hortulana, *Emberiza*, 122.
hortulanus, *Serinus*, 71.
hostilis, *Passer*, 101.
humei, *Phylloscopus*, 314.
hydrophilus, *Cinclus*, 497.
hyemalis, *Junco*, 145.
Hypolais, 351.
 — *hypolais*, 352.
 — *icterina*, 352.
 — *pallida*, 356.
 — — *elæica*, 356.
 — — *pallida*, 356.
 — *polyglotta*, 354.
hypoleuca, *Motacilla*, 288.
hypoleuca, *Muscicapa*, 288.

hypoleuca, *Muscicapa hypoleuca*, 288.
icterina, *Hypolais*, 352.
 —, *Sylvia*, 352.
Icterus baltimore, 39.
 — *galbula*, 39.
ignicapilla, *Sylvia*, 254.
ignicapillus, *Regulus*, 254.
 —, — *ignicapillus*, 254.
iliacus, *Turdus*, 404.
indica, *Pratincola*, 457.
indica, *Saxicola torquata*, 457.
isabellina, *Enanthe*, 443.
 —, *Saxicola*, 443.
 JACKDAW, 19.
 JAY, BRITISH, 28.
 —, CONTINENTAL, 27.
 — IRISH, 30.
Junco hyemalis, 145.
kleinschmidti, *Parus atricapillus*, 243.
 —, — *montanus*, 243.
lanceolata, *Locustella*, 333.
 —, *Sylvia*, 333.
Laniidae, 259.
Lanius, 260.
 — *auriculatus*, 268.
 — *badius*, 271.
 — *collurio*, 274.
 — — *collurio*, 274.
 — *excubitor*, 263.
 — — *excubitor*, 263.
 — — *meridionalis*, 266.
 — *Garrulus*, 278.
 — *major*, 263.
 — *meridionalis*, 266.
 — *minor*, 260.
 — *nubicus*, 272.
 — *Senator*, 268.
 — *senator*, 268.
 — — *badius*, 271.
 — — *senator*, 268.
lapponica, *Fringilla*, 138.
lapponicus, *Calcarius*, 138.
 —, — *lapponicus*, 138.
 —, *Plectrophanes*, 138.
 LARK, BLACK, 149.
 —, CALANDRA, 151.
 —, CRESTED, 157.
 —, EASTERN SHORT-TOED, 156.
 —, — SKY-, 166.
 —, SHORE-, 167.
 —, SHORT-TOED, 154.
 —, SKY-, 163.
 —, WHITE-WINGED, 147.
 —, WOOD-, 160.

- latirostris*, *Alseonax*, 287.
latirostris, *Muscicapa*, 287.
leucocephala, *Emberiza*, 113.
leucocephalos, *Emberiza*, 113.
leucocyana, *Cyanecula*, 477.
leucoptera, *Loxia*, 89, 91.
 —, — *leucoptera*, 91.
leucorhoa, *Motacilla*, 429.
leucorrhoea, *Enanthe ænanthe*, 429.
 —, *Saxicola ænanthe*, 429.
leucura, *Enanthe*, 446.
 —, — *leucura*, 446.
 —, *Saxicola*, 446.
leucurus, *Turdus*, 446.
Linaria, *Fringilla*, 59.
 — *Holboellii*, 60.
 — *holboellii*, 60.
 — *rostrata*, 61.
linaria, *Carduelis*, 59.
 —, — *linaria*, 59.
 —, *Linota*, 59.
 LINNET, 68.
Linota cannabina, 68.
 — *flavirostris*, 56.
 — *hornemanni*, 64.
 — *linaria*, 59.
 — *rufescens*, 62.
littoralis, *Anthus*, 190.
littoralis, *Anthus spinoletta*, 190.
Locustella, 326.
 — *certhiola*, 328.
 — *lanceolata*, 333.
 — *luscinioides*, 326.
 — — *luscinioides*, 326.
 — *nævia*, 330.
 — — *nævia*, 330.
longicauda, *Mecistura*, 248.
longipennis, *Alauda*, 156.
longipennis, *Calandrella brachydactyla*, 156.
Lophophanes cristatus scotica, 238.
Loxia, 83.
 — *bifasciata*, 89.
 — *Chloris*, 47.
 — *coccothraustes*, 44.
 — *curvirostra*, 83, 84, 87.
 — — *anglica*, 84.
 — — *curvirostra*, 84.
 — — *scotica*, 87.
 — *Enucleator*, 81.
 — *erythrina*, 78.
 — *leucoptera*, 89, 91.
 — — *bifasciata*, 89.
 — — *leucoptera*, 91.
 — *pityopsittacus*, 88.
 — *Pyrrhula*, 74.
 — *Pytyopsittacus*, 88.
 — *pytyopsittacus*, 88.
luctuosa, *Muscicapa*, 288.
ludovicianus, *Anthus*, 186.
Lugubris, *Motacilla*, 206.
lugubris, *Motacilla*, 206.
lugubris, *Motacilla alba*, 206.
Lullula, 160.
 — *arborea*, 160.
 — — *arborea*, 160.
Luscinia, 467.
 — *calliope*, 473.
 — *lusciniæ*, 471.
 — *megarhyncha*, 468.
 — — *megarhyncha*, 468.
 — *megarhynchos*, 468.
 —, *Motacilla*, 471.
 — *suecica suecica*, 474.
 — *svecica*, 473.
 — — *cyanecula*, 477.
 — — *gaetkei*, 473.
 — — *svecica*, 474.
lusciniæ, *Daulias*, 46.
lusciniæ, *Luscinia*, 471.
 —, *Sylvia*, 467.
luscinioides, *Acrocephalus*, 326.
luscinioides, *Locustella*, 326.
 — — *luscinioides*, 326.
 —, *Sylvia*, 326.
Luscinola, 324.
 — *melanopogon*, 324.
 — — *melanopogon*, 324.
 — *schwarzi*, 320.
macrorhynchos, *Nucifraga*, 26.
macrorhynchus, *Nucifraga caryocatactes*, 26.
magna, *Sturnella*, 39.
 MAGPIE, 21.
major, *Lanius*, 263.
major, *Parus*, 225, 227.
 —, — *major*, 225.
 —, *Pyrrhula*, 74.
 MARTIN, 509.
 —, SAND-, 513.
maura, *Pratincola*, 457.
Mecistura longicauda, 248.
 — *rosea*, 248.
 — *vagans*, 248.
megarhyncha, *Lucinia*, 468.
 —, — *megarhyncha*, 468.
megarhynchos, *Luscinia*, 468.
melanocephala, *Emberiza*, 115.
 —, *Euspiza*, 115.
 —, *Motacilla*, 198, 377.
 —, — *flava*, 198.
 —, *Sylvia*, 377.
 —, — *melanocephala*, 377.
Melanocorypha, 146.
 — *calandra*, 151.
 — — *calandra*, 151.
 — *sibirica*, 147.
 — *yelloniensis*, 149.
melanogaster, *Cinclus*, 497

melanoleuca, *Muscicapa*, 438.
melanoleuca, *Enanthe hispanica*, 438.
melanopogon, *Luscinola*, 324.
 —, — *melanopogon*, 324.
 —, *Sylvia*, 324.
Melizophilus provincialis, 382.
 — *undatus*, 382.
melophilus, *Erithacus rubecula*, 481.
meridionalis, *Lanius*, 266.
meridionalis, *Lanius excubitor*, 266.
Merula alpestris, 416.
merula, *Turdus*, 418.
 —, — *merula*, 418.
migratorius, *Turdus migratorius*, 413.
miliaria *Emberiza*, 108.
minor, *Lanius*, 260.
mitratus, *Parus*, 240.
mitratus, *Parus cristatus*, 240.
modularis, *Accentor*, 489.
 —, *Motacilla*, 484, 488.
modularis, *Prunella*, 488.
 —, — *modularis*, 488.
monedula, *Coleus*, 19.
 —, *Corvus*, 19.
montana, *Fringilla*, 104.
 —, *Sylvia*, 344.
montanus, *Passer*, 104.
 —, — *montanus*, 104.
Monticola cyanus, 421.
Monticola saxatilis, 421.
 — *solitarius*, 421.
Montifringilla, 98.
 — *nivalis*, 98.
 — — *nivalis*, 98.
montifringilla, *Fringilla*, 95.
Motacilla, 191.
 — *alba*, 206, 209.
 — — *alba*, 209.
 — — *lugubris*, 206.
 — — *personata*, 212.
 — *Atricapilla*, 366.
 — *aquatica*, 349.
 — *beema*, 196.
 — *boarula*, 202.
 — *Borin*, 364.
 — *cantillans*, 380.
 — *Certhiola*, 328.
 — *cervina*, 182.
 — *cinerea*, 202.
 — — *cinerea*, 202.
 — *Curruca*, 372.
 — *Feldegg*, 198.
 — *fedeggi*, 198.
 — *flava*, 192.
 — — *beema*, 196.
 — — *borealis*, 196.
 — — *cinereocapilla*, 197.
 — — *feldegg*, 198.

Motacilla flava flava, 192.
 — — *melanocephala*, 198.
 — — *rayi*, 199.
 — — *thunbergi*, 196.
 — *gibraltariensis*, 463.
 — *grisea*, 202.
 — *hispanica*, 435.
 — *hortensis*, 361.
 — *hypoleuca*, 288.
 — *leucorhoa*, 429.
 — *Lugubris*, 206.
 — *lugubris*, 206.
 — *Luscinia*, 471.
 — *melanocephala*, 198, 377.
 — *modularis*, 484, 488.
 — *nævia*, 330.
 — *nisoria*, 359.
 — *Enanthe*, 426.
 — *personata*, 212.
 — *Phoenicurus*, 459.
 — *pleschanka*, 441.
 — *Proregulus*, 316.
 — *raii*, 199.
 — *Regulus*, 251.
 — *Rubecula*, 479.
 — *Rubetra*, 449.
 — *Schœnobœnus*, 346.
 — *Sibilatrix*, 309.
 — *superciliosa*, 314.
 — *Svecica*, 474.
 — *Thunbergi*, 196.
 — *Trochilus*, 304.
 — *viridis*, 196.
 — *Yarrellii*, 206.
Motacillidæ, 170.
muraria, *Certhia*, 218.
muraria, *Tichodroma*, 218.
Muscicapa, 283.
 — *albicollis*, 292.
 — *atricapilla*, 288.
 — *collaris*, 292.
 — *grisola*, 284.
 — *hypoleuca*, 288.
 — — *hypoleuca*, 288.
 — *latirostris*, 287.
 — *luctuosa*, 288.
 — *melanoleuca*, 438.
 — *parva*, 295.
 — — *parva*, 295.
 — *striata*, 284.
 — — *striata*, 284.
Muscicapidæ, 282.
musicus, *Turdus*, 404.
musicus, *Turdus*, 399.
Mynah, *Indian*, 39.

nævia, *Locustella*, 330.
 —, — *nævia*, 330.
nævius, *Acrocephalus*, 330.
neglectus, *Budytes*, 199.

newtoni, *Parus major*, 227.
 NIGHTINGALE, 468.
 —, THRUSH-, 471.
nipalensis, *Delichon*, 509
nisoria, *Motacilla*, 359.
nisoria, *Sylvia*, 359.
 —, — *nisoria*, 359.
nitidus, *Phylloscopus*, 307.
nivalis, *Emberiza*, 141.
 —, *Fringilla*, 98.
nivalis, *Montifringilla*, 98.
 —, — *nivalis*, 98.
 —, *Plectrophanes*, 141.
 —, *Plectrophenax*, 141
nubicus, *Lanius*, 272.
Nucifraga, 23.
 — *caryocatactes*, 24, 26.
 — — *caryocatactes*, 24.
 — — *macrorhynchus*, 26.
 — *macrorhynchus*, 26.
 NUTCRACKER, SLENDER-BILLED, 26.
 —, THICK-BILLED, 24.
 NUTHATCH, BRITISH, 221.

obscura, *Alauda*, 188.
obscurus, *Anthus*, 188.
 —, — *spinoletta*, 188.
obscurus, *Parus cæruleus*, 231.
occidentalis, *Accentor modularis*,
 489.
occidentalis, *Prunella modularis*, 489
 —, *Saxicola*, 435.
ochrurus, *Phœnicurus*, 463.
Otocorys alpestris, 167.
Oenanthe, 425.
 — *deserti*, 431.
 — — *albifrons*, 434.
 — — *deserti*, 431.
 — — *homochroa*, 431.
 — *hispanica*, 435.
 — — *hispanica*, 435.
 — — *melanoleuca*, 438.
 — — *xanthomelæna*, 438.
 — *isabellina*, 443.
 — *leucura*, 446.
 — — *leucura*, 446.
 — — *syenitica*, 448.
 —, *Motacilla*, 426.
œnanthe, 426.
 — — *leucorrhœa*, 429.
 — — *pleschanka*, 441.
 — — *pleschanka*, 441.
 —, *Oenanthe*, 426.
 —, — *œnanthe*, 426.
 — *Saxicola*, 426, 429.
orientalis, *Acrocephalus arundina-*
ceus, 337.
 —, *Salicaria turdina*, 337.
 ORIOLE, GOLDEN, 40.

Oriolidae, 39.
Oriolus, 40.
Oriolus, *Coracias*, 40.
 — *galbula*, 40.
Oriolus oriolus, 40.
 — — *oriolus*, 40.
oriolus, *Oriolus*, 40.
 —, — *oriolus*, 40.
orphea, *Sylvia*, 361.
pallida, *Hypolais*, 356.
 —, — *pallida*, 356.
palustris, *Acrocephalus*, 342.
 —, *Emberiza*, 136.
 —, — *palustris*, 136.
 —, — *pyrrhuloides*, 136.
 —, *Parus*, 241.
 —, *Sylvia*, 342.
Panurus, 256.
 — *biarmicus*, 256.
 — — *biarmicus*, 257.
Paridae, 224.
Parus, 225.
 — *ater*, 233, 435.
 — — *ater*, 233.
 — — *britannicus*, 235.
 — — *hibernicus*, 237.
 — *atricapillus*, 243.
 — — *borealis*, 245.
 — — *kleinschmidti*, 243.
 — *biarmicus*, 256.
 — *borealis*, 245.
 — *britannicus*, 235.
 — *cæruleus*, 230, 231.
 — — *cæruleus*, 230.
 — — *obscurus*, 231.
 — *caudatus*, 246.
 — *cristatus*, 238.
 — — *cristatus*, 239.
 — — *mitratus*, 240.
 — — *scoticus*, 238.
 — *hibernicus*, 237.
 — *major*, 225, 227.
 — — *major*, 225.
 — — *newtoni*, 227.
 — *mitratus*, 243.
 — *montanus kleinschmidti*, 243.
 — *palustris*, 241.
 — — *dresseri*, 241.
parva, *Muscicapa*, 295.
 —, — *parva*, 295.
parvulus, *Troglodytes*, 492, 495,
 496.
Passer, 100.
 — *domesticus*, 101.
 — — *domesticus*, 101.
 — *hostilis*, 101.
 — *montanus*, 104.
 — — *montanus*, 104.
Passeres, 6.

- Pastor*, 37.
 — *roseus*, 37.
pennsylvanicus, *Anthus*, 186.
personata, *Motacilla*, 212.
personata, *Motacilla alba*, 212.
petrosa, *Alauda*, 188.
petrosus, *Anthus spinoletta*, 188.
philomelos, *Turdus*, 399, 400.
philomelus, *Turdus*, 399.
 —, — *philomelus*, 399.
phœniceus, *Agelaius*, 39.
Phœnicurus, 459.
 —, *Motacilla*, 459.
 — *ochrurus*, 463.
 — — *gibraltariensis*, 463.
 — *phœnicurus*, 459.
 — — *phœnicurus*, 459.
phœnicurus, *Phœnicurus*, 459.
 —, — *phœnicurus*, 459.
 —, *Ruticilla*, 459.
phragmitis, *Acrocephalus*, 346.
Phyllopneuste, *borealis*, 312.
 — *eversmanni*, 306.
 — *fuscata*, 308.
 — *Schwarzi*, 320.
Phylloscopus, 297.
 — *borealis*, 312.
 — — *borealis*, 312.
 — *collybita*, 298.
 — — *abietina*, 301.
 — — *abietinus*, 301.
 — — *collybita*, 298.
 — — *tristis*, 302.
 — *fuscatus*, 318.
 — *humel*, 314.
 — — *præmium*, 314.
 — *nitidus*, 307.
 — — *viridanus*, 307.
 — *proregulus*, 316.
 — — *proregulus*, 316.
 — *sibilatrix*, 309.
 — — *sibilatrix*, 309.
 — *superciliosus*, 314.
 — — *superciliosus*, 314.
 — *tristis*, 302.
 — *trochilus*, 304.
 — — *eversmanni*, 306.
 — — *trochilus*, 304.
 — *viridanus*, 307.
Pica, 21.
 —, *Corvus*, 21.
 — *pica*, 21.
 — — *pica*, 21.
 — *rustica*, 21.
pilaris, *Turdus*, 392.
pileata, *Pyrrhula*, 75.
pileata, *Pyrrhula pyrrhula*, 75.
Pinicola, 81.
 — *enucleator*, 81.
 — — *enucleator*, 81.
Pinicola rubra, 81.
PIPIPIT, AMERICAN WATER-, 186.
 —, MEADOW-, 179.
 —, RED-THROATED, 182.
 —, RICHARD'S, 172.
 —, ROCK-, 188.
 —, SCANDINAVIAN ROCK-, 190.
 —, TAWNY, 174.
 —, TREE-, 176.
 —, WATER-, 184.
pityopsittacus, *Loxia*, 88.
Plectrophanes lapponicus, 138.
 — *nivalis*, 141.
Plectrophenax, 141.
 — *nivalis*, 141.
pleschanka, *Motacilla*, 441.
pleschanka, *Oenanthe*, 441.
 —, — *pleschanka*, 441.
 —, *Saxicola*, 441.
polyglotta, *Hypolaïs*, 354.
 — *Sylvia*, 354.
pratensis, *Alauda*, 179.
pratensis, *Anthus*, 179.
Pratincola indica, 457.
 — *maura*, 457.
 — *rubetra*, 449.
 — *rubicola*, 454.
 — *torquata hibernans*, 454.
præmium, *Phylloscopus humel*, 314.
Progne subis subis, 515.
Proregulus, *Motacilla*, 316.
proregulus, *Phylloscopus*, 316.
 —, — *proregulus*, 316.
provincialis, *Melizophilus*, 382.
 —, *Sylvia*, 382.
Prunella, 484.
 — *collaris*, 485.
 — — *collaris*, 485.
 — *modularis*, 488.
 — — *modularis*, 485.
 — — *occidentalis*, 489.
Prunellida, 484.
pusilla, *Emberiza*, 130.
Pycnonotus capensis, 281.
Pyrrhacorax, 31.
 — *graculus*, 31, 33.
 — *pyrrhacorax*, 31.
 —, *Upupa*, 31.
pyrrhacorax, *Pyrrhacorax*, 31.
Pyrrhula, 74.
 — *enucleator*, 81.
 — *europæa*, 75.
 — *erythrina*, 78.
 —, *Loxia*, 74.
 — *major*, 74.
 — *pileata*, 75.
 — *pyrrhula*, 74.
 — — *pileata*, 75.
 — — *pyrrhula*, 74.
pyrrhula, *Pyrrhula*, 74.

pyrrhula, *Pyrrhula pyrrhula*, 74.

Pytyopsittacus, *Loxia*, 88.

pytyopsittacus, *Loxia*, 88.

raii, *Motacilla*, 199.

RAVEN, 9.

Rayi, *Budytes*, 199.

rayi, *Motacilla flava*, 199.

REDPOLL, *COUES'S*, 66.

—, *GREENLAND*, 61.

—, *HOLBÖLL'S*, 60.

—, *HORNEMANN'S*, 64.

—, *LESSER*, 62.

—, *MEALY*, 59.

REDSTART, 459.

—, *BLACK*, 463.

REDWING, 404.

Regulus, 250.

— *calendula calendula*, 256.

— *cristatus*, 251, 252.

— *ignicapillus*, 254.

— — *ignicapillus*, 254.

—, *Motacilla*, 251.

— *regulus*, 151.

— — *anglorum*, 252.

— — *regulus*, 251.

regulus, *Regulus*, 251.

—, — *regulus*, 251.

religiosa, *Gracula*, 39.

richardi, *Anthus*, 172.

—, — *richardi*, 172.

RING-OUZEL, 413.

—, *ALPINE*, 416.

Riparia, 513.

— *europæa*, 513.

— *riparia*, 513.

— — *riparia*, 513.

riparia, *Cotile*, 513.

—, *Hirundo*, 513.

riparia, *Riparia*, 513.

—, — *riparia*, 513.

Robin, *American*, 413.

ROBIN, *BRITISH*, 481.

—, *CONTINENTAL*, 479.

ROOK, 15.

rosea, *Mecistura*, 248.

roseus, *Agithalus caudatus*, 248.

—, *Pastor*, 37.

—, *Turdus*, 37.

rostrata, *Carduelis linaria*, 61.

— *Linaria*, 61.

rostratus, *Agiothus*, 61.

Rubecula, *Motacilla*, 479.

rubecula, *Erithacus*, 479, 481.

—, — *rubecula*, 479.

Rubescens, *Alauda*, 186.

rubescens, *Anthus spinoletta*, 186.

Rubetra, *Motacilla*, 449.

rubetra, *Pratincola*, 449.

rubetra, *Saxicola*, 449.

rubetra, *Saxicola rubetra*, 449.

rubicola, *Pratincola*, 454.

rubra, *Pinicola*, 81.

Ruby-throat, *Siberian*, 473.

rufa, *Sylvia*, 369.

rufescens, *Linota*, 62.

ruficollis, *Turdus*, 410.

rustergum, *Garrulus glandarius*, 28.

rufula, *Hirundo*, 507.

rufula, *Hirundo daurica*, 507.

rupestris, *Anthus*, 190.

rappelli, *Sylvia*, 375.

rustica, *Emberiza*, 128.

—, *Hirundo*, 503.

—, — *rustica*, 503.

—, *Pica*, 21.

Ruticilla phœnicurus, 459.

— *suecica*, 473.

— *titys*, 463.

Salicaria elæica, 356.

— *turdina orientalis*, 337.

salicaria, *Sylvia*, 364.

saxatilis, *Monticola*, 421.

—, *Turdus*, 421.

Saxicola, 449.

— *albifrons*, 434.

— *amphileuca*, 439.

— *aurita*, 439.

— *deserti*, 431.

— — *atregularis*, 434.

— *hispanica hispanica*, 435.

— *homochroa*, 431.

— *isabellina*, 443.

— *leucura*, 446.

— *occidentalis*, 435.

— *cœnanthe*, 426, 429.

— — *leucorrhœa*, 429.

— *pleschanka*, 441.

— *rubetra*, 449.

— — *rubetra*, 449.

— *stapazina*, 435, 439.

— *syenitica*, 448.

— *torquata*, 454.

— — *hibernans*, 454.

— — *indica*, 457.

— *xanthomelana*, 438.

schœniclus, *Emberiza*, 133.

—, — *schœniclus*, 133.

Schœnobæus, *Motacilla*, 346.

Schœnobæus, *Acrocephalus*, 346.

Schwarzi, *Phyllopneuste*, 320.

— *Sylvia*, 320.

schwarzi, *Herbivocula*, 320.

—, *Lusciniola*, 320.

scirpaceus, *Acrocephalus*, 339.

—, — *scirpaceus*, 339.

—, *Turdus*, 339.

Scolécophagus carolinus, 39.

— *ferrugineus*, 39.

- scotica*, *Alauda arvensis*, 163.
 —, *Lophophanes cristatus*, 238, 308.
scotica, *Loxia curvirostra*, 87.
scoticus, *Parus cristatus*, 238.
Senator, *Lanius*, 268.
senator, *Lanius senator*, 268.
SERIN, 71.
 —, *Canary*, 73.
Serinus, 71.
 —, *canarius*, 71.
 —, — *serinus*, 71, 73.
 —, *Fringilla*, 71.
 —, *hortulanus*, 71.
serinus, *Serinus canarius*, 71, 73.
SHRIKE, *CORSICAN WOODCHAT*, 277.
 —, *GREAT GREY*, 263.
 —, *LESSER GREY*, 260.
 —, *MASKED*, 272.
 —, *RED-BACKED*, 274.
 —, *SOUTH EUROPEAN GREY*, 266.
 —, *WOODCHAT*, 268.
Sibilatrix, *Motacilla*, 309.
sibilatrix, *Phylloscopus*, 309.
 —, — *sibilatrix*, 309.
sibirica, *Alauda*, 147.
sibirica, *Melanocorypha*, 147.
sibiricus, *Turdus sibiricus*, 392.
SISKIN, 54.
Sitta, 221.
 —, *cæsia*, 221.
 —, *europæa*, 221.
 —, *britannica*, 221.
Sittidæ, 221.
Snowbird, *American*, 145.
SNOW-FINCH, 98.
solitarius, *Monticola*, 421.
Sparrow, *American White-throated*, 145.
SPARROW, *BRITISH HEDGE*-, 489.
 —, *CONTINENTAL HEDGE*-, 488.
 —, *HOUSE*-, 101.
 —, *TREE*-, 104.
spermologus, *Colæus monedula*, 19.
 —, *Corvus*, 19.
Spinoletta, *Alauda*, 184.
spinoletta, *Anthus*, 184.
 —, — *spinoletta*, 184.
Spinus, *Fringilla*, 54.
spinus, *Carduelis*, 54.
spipoletta, *Anthus*, 184.
stapazina, *Saxicola*, 435, 439.
STARLING, 34.
 —, *Red-winged*, 39.
 —, *ROSE-COLOURED*, 37.
 —, *SHETLAND*, *vi.
STONECHAT, *BRITISH*, 454.
 —, *INDIAN*, 457.
strepera, *Sylvia*, 339.
streperus, *Acrocephalus*, 339.
striata, *Muscicapa*, 284.
 —, — *striata*, 284.
Sturnella magna, 39.
Sturnus, 34.
 —, *Cinclus*, 497.
 —, *collaris*, 485.
 —, *vulgaris*, *vi, 34.
 —, — *vulgaris*, 34.
 —, — *zetlandicus*, *vi.
subalpina, *Sylvia*, 380.
subis, *Progne subis*, 515.
suecica, *Cyanecula*, 473.
 —, *Luscinia suecica*, 474.
 —, *Ruticilla*, 473.
superciliosa, *Motacilla*, 314.
superciliosus, *Phylloscopus*, 314.
 —, — *superciliosus*, 314.
Svecica, *Motacilla*, 474.
svecica, *Luscinia*, 473.
 —, — *svecica*, 474.
SWALLOW, 503.
 —, *RED-RUMPED*, 507.
syenitica, *Eranthe leucura*, 448.
 —, *Saxicola*, 448.
Sylvia, 357.
 —, *abietina*, 301.
 —, *atricapilla*, 366.
 —, — *atricapilla*, 366.
 —, *borin*, 364.
 —, *cantillans*, 380.
 —, — *cantillans*, 380.
 —, *cetti*, 322.
 —, *cinerea*, 369.
 —, *collybita*, 298.
 —, *communis*, 369.
 —, — *communis*, 369.
 —, *curruca*, 372.
 —, — *curruca*, 372.
 —, *cyaneula*, 477.
 —, *dartfordiensis*, 382.
 —, *galactotes*, 385.
 —, *hortensis*, 361.
 —, — *hortensis*, 361.
 —, *icterina*, 352.
 —, *ignicapilla*, 254.
 —, *lanceolata*, 333.
 —, *luscinia*, 467.
 —, *luscinoides*, 326.
 —, *melanocephala*, 377.
 —, — *melanocephala*, 377.
 —, *melanopogon*, 324.
 —, *montana*, 344.
 —, *nisoria*, 359.
 —, — *nisoria*, 359.
 —, *orphea*, 361.
 —, *palustris*, 342.
 —, *phœnicurus*, 459.
 —, *polyglotta*, 354.
 —, *provincialis*, 382.
 —, *rufa*, 369.

Sylvia ruppelli, 375.
 — *salicaria*, 364.
 — *Schwarzi*, 320.
 — *strepera*, 339.
 — *subalpina*, 380.
 — *undata*, 382.
 — — *dartjordiensis*, 382.
syriacus, *Agrobates galactotes*, 388.

Tachycineta bicolor, 515.
tatarica, *Alauda*, 149.
THRUSH, BLACK-THROATED, 410.
 —, **BRITISH SONG-**, 400.
 —, **CONTINENTAL SONG-**, 399.
 —, **DUSKY**, 407.
 —, **HEBRIDEAN SONG-**, 403.
 —, **MISTLE-**, 395.
 —, **ROCK-**, 421.
 —, **Siberian**, 392.
 —, **WHITE'S**, 390.
Thunbergi, *Motacilla*, 196.
thunbergi, *Motacilla flava*, 196.
Tichodroma, 218.
 — *muraria*, 218.
TITMOUSE, BEARDED, 256.
 —, **BRITISH BLUE**, 231.
 —, — **COAL-**, 235.
 —, — **GREAT**, 227.
 —, — **LONG-TAILED**, 248.
 —, — **MARSH-**, 241.
 —, — **WILLOW-**, 243.
 —, **CENTRAL EUROPEAN CRESTED**, 240.
 —, **CONTINENTAL BLUE**, 230.
 —, — **COAL-**, 233.
 —, — **GREAT**, 225.
 —, **IRISH COAL-**, 237.
 —, **NORTHERN CRESTED**, 239.
 —, — **LONG-TAILED**, 246.
 —, — **WILLOW-**, 244.
 — **SCOTTISH CRESTED**, 238.
titys, *Ruticilla*, 463.
torquata, *Saxicola*, 454.
torquatus, *Turdus*, 413.
 —, — *torquatus*, 413.
TREE-CREEPER, BRITISH, 214.
 —, **NORTHERN**, 217.
tristis, *Carduelis*, 56.
 —, *Phylloscopus*, 302.
tristis, *Phylloscopus collybita*, 302.
trivialis, *Alauda*, 176.
trivialis, *Anthus*, 176.
 —, — *trivialis*, 176.
Trochilus, *Motacilla*, 304.
trochilus, *Phylloscopus*, 304.
 —, — *trochilus*, 304.
Troglodytes, 492.
 — *aëdon*, 492.
 — *hirtensis*, 495.
 —, *Motacilla*, 492.

Troglodytes parvulus, 492, 495, 496.
Troglodytes troglodytes, 492.
 — — *hirtensis*, 495.
 — — *troglodytes*, 492.
 — — *zealandicus*, 496, 497.
troglodytes, *Troglodytes*, 492.
 —, — *troglodytes*, 492.
Troglodytidae, 492.
tschusii, *Emberiza palustris*, 137.
 —, — *schoeniclus*, 137.
turdoides, *Acrocephalus*, 335.
Turdus, 389.
 — *arundinaceus*, 335.
 — *atrigrularis*, 410.
 — *atrogrularis*, 410.
 — *aureus*, 390.
 — *dauma*, 390.
 — — *aureus*, 390.
 — *dubius*, 407.
 — *eunomus*, 407.
 — *fuscatus*, 407.
 — *iliacus*, 404.
 — *leucurus*, 446.
 — *merula*, 418.
 — — *merula*, 418.
 — *migratorius migratorius*, 413.
 — *musicus*, 404.
 — *musicus*, 399, 400.
 — — *hebridensis*, 403.
 — *philomelos*, 399.
 — *philomelus*, 399.
 — — *clarkii*, 400.
 — — *hebridensis*, 403.
 — — *philomelus*, 399.
 — *pilaris*, 392.
 — *roseus*, 37.
 — *ruficollis*, 410.
 — — *atrogrularis*, 410.
 — *saxatilis*, 421.
 — *scirpaceus*, 339.
 — *sibiricus sibiricus*, 392.
 — *torquatus*, 413.
 — — *alpestris*, 416.
 — — *torquatus*, 413.
 — *varius*, 390.
 — *viscivorus*, 395.
 — — *viscivorus*, 395.
 — *Whitei*, 390.
TWITE, 56.

undata, *Sylvia*, 382.
undatus, *Melizophilus*, 382
Upupa pyrrhocorax, 31.
urbica, *Chelidon*, 509.
urbica, *Delichon*, 509.
 —, — *urbica*, 509.
 —, *Hirundo*, 509.

vagans, *Mecistura*, 248.
varius, *Turdus*, 390.

viridanus, *Phylloscopus*, 307.
viridanus, *Phylloscopus nitidus*, 307.
viridis, *Motacilla*, 196.
viscivorus, *Turdus*, 395.
 —, — *viscivorus*, 395.
vulgaris, *Coccothraustes*, 44.
 —, *Sturnus*, *VI, 34.
vulgaris, *Sturnus-vulgaris*, 34.

WAGTAIL, ASHY-HEADED, 197.
 —, BLACK-HEADED, 198.
 —, BLUE-HEADED, 192.
 —, GREY, 202.
 —, GREY-HEADED, 196.
 —, MASKED, 212.
 —, PIED, 206.
 —, SYKES'S, 196.
 —, WHITE, 209.
 —, YELLOW, 199.
WALL-CREEPER, 218.
Warbler, American Yellow, 213.
WARBLER, AQUATIC, 349.
—, BARRED, 359.
—, BLYTH'S REED-, 344.
—, BROWN-BACKED, 388.
—, CETTI'S, 323.
—, DARTFORD, 382.
—, DUSKY, 319.
—, EASTERN GREAT REED-, 337.
—, EVERSMAUN'S, 312.
—, GARDEN-, 364.
—, GRASSHOPPER-, 330.
—, GREAT REED-, 335.
—, GREENISH, 307.
—, ICTERINE, 352.
—, LANCEOLATED, 333.
—, MARSH-, 343.
—, MELODIOUS, 354.
—, MOUSTACHED, 324.
—, NORTHERN WILLOW-, 306.
—, OLIVACEOUS, 356.
—, ORPHEAN, 361.
—, PALLAS'S, 316.
—, — GRASSHOPPER-, 328.
—, RADDE'S BUSH-, 320.
—, REED-, 339.

WARBLER, RUFOUS, 385.
 —, RÜPPELL'S, 375.
 —, SARDINIAN, 377.
 —, SAVI'S, 326.
 —, SEDGE-, 346.
 —, SUBALPINE, 380.
 —, WILLOW-, 304.
 —, WOOD-, 309.
 —, YELLOW-BROWED, 315.
WAXWING, 278.
WHEATEAR, 426.
—, BLACK, 446.
—, EASTERN BLACK-EARED, 438.
—, — DESERT-, 434.
—, GREENLAND, 429.
—, ISABELLINE, 443.
—, NORTH AFRICAN BLACK, 448.
—, PIED, 441.
—, WESTERN BLACK-EARED, 435.
—, — DESERT-, 431.
WHINCHAT, 449.
Whitei, *Turdus*, 390.
WHITETHROAT, 369.
—, LESSER, 372.
wolfi, *Cyanecula*, 477.
WREN, 492.
—, American Ruby-crowned, 256.
—, BRITISH GOLD-CRESTED, 252.
—, CONTINENTAL GOLD-CRESTED, 251.
—, FIRE-CRESTED, 254.
—, ST. KILDA, 495.
—, SHETLAND, 496.

xanthomelæna, *Oenanthe hispanica*, 439.
—, *Saxicola*, 438.

Yarrellii, *Motacilla*, 206.
yeltoniensis, *Alauda*, 149.
yeltoniensis, *Melanocorypha*, 149.

zetlandicus, *Sturnus vulgaris*, *VI.
—, *Troglodytes troglodytes*, 496, 497.
Zonotrichia albicollis, 145.

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